

INTEST CORP  
Form 10-K  
March 28, 2018

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**UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549  
FORM 10-K**

*(Mark One)*

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

For the fiscal year ended December 31, 2017  
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 1-36117

**inTEST Corporation**

(Exact name of registrant as specified in its charter)

**DELAWARE**

(State or Other Jurisdiction of Incorporation or Organization)

**22-2370659**

(I.R.S. Employer Identification Number)

**804 EAST GATE DRIVE, SUITE 200**

**MT. LAUREL, NEW JERSEY**

(Address of Principal Executive Offices)

**08054**

(Zip Code)

**Registrant's telephone number, including area code: (856) 505-8800**

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

<u>Title of Each Class</u>	<u>Name of Each Exchange on Which Registered</u>
Common Stock, par value \$0.01 per share	NYSE American

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if 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 check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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, or a smaller reporting company, or emerging growth company. See definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by checkmark if the registrant has elected not to use the extended transition period for complying with any new or revised financial account 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

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold on June 30, 2017 (the last business day of the registrant's most recently completed second fiscal quarter), was: \$57,738,020.

The number of shares outstanding of the registrant's Common Stock, as of March 16, 2018, was 10,473,558.

#### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive proxy statement of the Registrant for the Registrant's 2018 Annual Meeting of Stockholders, to be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year covered by this Report, are incorporated by reference into Part III of this Report.

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**Cautionary Statement Regarding Forward-Looking Statements**

From time to time, we make written or oral "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including statements contained in our filings with the Securities and Exchange Commission ("SEC") (including this Report on Form 10-K), our annual report to stockholders and in other communications. These statements do not convey historical information, but relate to predicted or potential future events, such as statements of our plans, strategies and intentions, or our future performance or goals. Our forward-looking statements can often be identified by the use of forward-looking terminology such as "believes," "expects," "intends," "may," "will," "should," "plans" or "anticipates" or similar terminology, and include, but are not limited to, statements made in this Report regarding:

- the possibility of future acquisitions or dispositions and the successful integration of any acquired operations;
- the ability to borrow funds or raise capital to finance major potential acquisitions;
- the success of our strategy to diversify our business by entering markets outside the semiconductor and automated test equipment ("ATE"), markets, including the automotive, consumer electronics, defense/aerospace, energy, industrial, telecommunications and other markets;
- indications of a change in the market cycles in the semiconductor and ATE markets or other markets we serve;
- developments and trends in the semiconductor and ATE markets;
- competitive pricing pressures;
- the development of new products and technologies by us or our competitors;
- effects of exchange rate fluctuations;
- general economic conditions both domestically and globally;
- the anticipated market for our products;
- the availability of materials used to manufacture our products;
- the availability of and retention of key personnel;
- net revenues generated by foreign subsidiaries;
- the sufficiency of cash balances, lines of credit and net cash from operations;
- stock price fluctuations; and
- other projections of net revenues, taxable earnings (loss), net earnings (loss), net earnings (loss) per share, capital expenditures and other financial items.

Investors and prospective investors are cautioned that such forward-looking statements are only projections based on current estimations. These statements involve risks and uncertainties and are based upon various assumptions. We discuss many of these risks and uncertainties under Item 1A "Risk Factors," below, and elsewhere in this Report. These risks and uncertainties, among others, could cause our actual future results to differ materially from those described in our forward-looking statements or from our prior results. We are not obligated to update these

forward-looking statements, even though our situation may change in the future.

## **PART I**

### **Item 1. BUSINESS**

#### **INTRODUCTION**

In this report, "we," "us," "our," and the "Company" refer to inTEST Corporation and its consolidated subsidiaries. We are an independent designer, manufacturer and marketer of thermal management products and ATE interface solutions which are used by semiconductor manufacturers to perform development, qualifying and final testing of integrated circuits ("ICs") and wafers, and for other electronic test across a range of industries including the automotive, defense/aerospace, energy, industrial, telecommunications and other markets. We also offer induction heating products for joining and forming metals in a variety of industrial markets, including automotive, aerospace, machinery, wire & fasteners, medical, semiconductor, food & beverage, and packaging. Our high-performance products are designed to enable our customers to improve the efficiency of their test and manufacturing processes and, consequently, their profitability.

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We sell our products worldwide. Within the ATE market, we sell our products both directly to major semiconductor manufacturers and semiconductor test subcontractors and indirectly through leading ATE manufacturers. In markets outside the ATE market, we sell our products directly to the end user of the product. Our largest customers include Analog Devices, Inc., Cypress Semiconductor Corporation, Foxconn Optical Interconnect Technologies, Inc., Hakuto Co. Ltd., NaigaiTEC Corporation, NXP Semiconductors N.V., Rosendahl Nextrom GmbH, STMicroelectronics N.V., Teradyne, Inc. and Texas Instruments Incorporated.

The consolidated entity is comprised of inTEST Corporation (parent) and our wholly-owned subsidiaries. inTEST Corporation was incorporated in New Jersey in 1981 and reincorporated in Delaware in April 1997. During 2016, we reorganized our business from three product segments, Thermal Products, Mechanical Products and Electrical Products, into two product segments, Thermal Products ("Thermal") and Electromechanical Semiconductor Products ("EMS"). Accordingly, effective January 1, 2017, we have two reportable segments, which are also our reporting units. Prior period information has been reclassified to be comparable to the presentation for 2017.

On May 24, 2017, we completed the acquisition of Ambrell Corporation ("Ambrell") for \$22.0 million in cash. The acquisition was completed by acquiring all of the outstanding capital stock of Ambrell. Ambrell is a manufacturer of precision induction heating systems which are used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. The Ambrell acquisition complements our current thermal technologies and broadens our diverse customer base, allowing expansion within many non-semiconductor related markets, such as consumer product packaging, fiber-optics, automotive and other markets. Ambrell's operations are included in our Thermal segment. Ambrell manufactures its products in the U.S. and conducts marketing and support activities from its facilities in the U.S., the Netherlands and the U.K. This acquisition is discussed further in Note 3 to our consolidated financial statements included in Item 8 of this Report on Form 10-K.

## MARKETS

### Overview

Our business is grounded in the ATE market, which provides automated test equipment to the semiconductor market. While the ATE market remains a key driver in our business, since 2009, we have taken actions to diversify our served markets to address the thermal test requirements of several other markets outside the semiconductor market as well as certain thermal process industrial requirements. The markets we have targeted outside the semiconductor market include the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. Prior to the acquisition of Ambrell in May 2017, as discussed above, we offered only highly specialized engineering solutions in these markets outside the semiconductor market, the demand for which is limited and which we expect may vary significantly from period to period. Ambrell sells its precision induction heating systems almost exclusively to customers in the industrial market, which is a non-semiconductor market. We expect that the acquisition of Ambrell will significantly reduce our dependence on customers in the semiconductor market. We expect that our future orders and net revenues will be approximately equally split between the semiconductor and non-semiconductor markets. During 2017 and 2016, our net revenues in markets outside the semiconductor market were \$29.0 million (including \$13.2 million of net revenues attributable to Ambrell) and \$12.2 million, respectively, and represented 44% and 30%, respectively, of our total net revenues. In the last five years, our net revenues from sales in markets outside the semiconductor market have ranged from 27% to 44%.

The level of our net revenues in the various markets we serve outside the semiconductor market varies significantly from market to market. During 2017 and 2016, our net revenues from the telecommunications market represented 15% of our total net revenues for both years, while our net revenues from the defense/aerospace market represented 5% and 8%, respectively, of our total net revenues and our net revenues from the industrial market represented 21%



and 2%, respectively, of our total net revenues. The level of our net revenues in these non-semiconductor markets has varied significantly in the past and we expect will vary significantly in the future as we build our presence in these markets and establish new markets for our products. One of our goals is to further expand our sales in these markets outside the semiconductor market; however, due to the highly specialized nature of many of our product offerings in these non-semiconductor markets, we do not expect broad market penetration in many of these markets and therefore, do not anticipate developing meaningful market shares in these non-semiconductor markets. Consequently, we are continuing to evaluate buying patterns and opportunities for growth in these markets that may affect our performance.

The one non-semiconductor market where we believe we have developed a meaningful market share is the optical transceiver market, which is a submarket to the broad telecommunications market. In contrast to the semiconductor or ATE markets where we serve a broad range of customers and where our business trends follow the overall market trends within the semiconductor or ATE markets, in the optical transceiver submarket, we only serve those companies producing high speed transceiver devices, which represent only a portion of that submarket, and therefore, optical transceiver submarket trends do not have a similar material impact on our financial results. The following discussion of our markets, therefore, is limited to only the ATE and semiconductor markets, which currently represent the majority of our net revenues.

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### Semiconductor and ATE Markets

Historically, the semiconductor market has been characterized by rapid technological change, wide fluctuations in demand and shortening product life cycles. Designers and manufacturers of a variety of electronic and industrial products, such as cell phones, telecom and datacom systems, Internet access devices, computers, transportation and consumer electronics, require increasingly complex ICs to provide improved end-product performance demanded by their customers. Semiconductor manufacturers generally compete based on product performance and price. We believe that testing costs represent a significant portion of the total cost of manufacturing ICs. Semiconductor manufacturers remain under pressure to maximize production yields and reduce testing costs. At the same time, the growing complexity of ICs has increased the difficulty of maximizing test yields. In order to address these market trends, semiconductor manufacturers strive for more effective utilization of ATE, smaller test areas and increased wafer level testing.

Demand for new ATE and related equipment depends upon several factors, including the demand for products that incorporate ICs, the increasing complexity of ICs and the emergence of new IC design, production and packaging technologies. Some of the evolutionary changes in IC technologies included the shift to 300 mm wafers in production, system-on-a-chip ("SOC") where digital, analog and memory functions are combined on a single IC, and chip scale packaging. As a result of these and other advances, semiconductor manufacturers may require additional ATE not only to handle increases in production but also to handle the more sophisticated testing requirements of ICs.

### *IC Test Process*

Semiconductor manufacturers typically produce ICs in multiples of several hundred on a silicon wafer which is later separated or "diced" into individual ICs. Extended leads are then attached to the individual ICs for later connection to other electrical components. In most cases, the ICs are then encapsulated in a plastic, ceramic or other protective housing. These process steps are called "packaging."

Wafers are tested before being diced and packaged, to ensure that only properly functioning ICs are packaged. This testing step has several names, including "front-end test," "wafer test," "wafer probe" or "wafer sort." In front-end test, an electronic handling device known as a wafer prober automatically positions the wafer under a probe card which is electronically connected to a "test head," which connects electrically to a test system. During front-end testing, there is a growing trend of thermally conditioning the wafer during test. Once the good ICs have been identified, they are packaged.

The packaged ICs also require testing, called "back-end test" or "final test," to determine if they meet design and performance specifications. Packaged ICs are tested after loading into another type of electronic handling device called a "package handler" or "handler," which then transfers the packaged ICs into a test socket which is attached to the test head. These handlers may be temperature controlled for testing. "Wafer probers" and "handlers" are sometimes referred to in this Report collectively as "electronic device handlers."

Testers range in price from approximately \$100,000 to over \$2.0 million each, depending primarily on the complexity of the IC to be tested. Probers and handlers range in price from approximately \$50,000 to \$500,000. A typical test floor of a large semiconductor manufacturer may have 100 test heads and 100 probers or 250 handlers supplied by various vendors for use at any one time. While larger global semiconductor manufacturers typically purchase ATE to test the ICs they manufacture, there are a growing number of semiconductor manufacturers who outsource IC testing to third-party foundries, test and assembly providers.

Test head manipulators, also referred to as positioners, facilitate the movement of the test head to the electronic device handler. Docking hardware mechanically connects the test head to the wafer prober or handler. Tester interface

products provide the electrical connection between the test head and the wafer or packaged IC. Traditionally, temperature management products are used in back-end test to allow a manufacturer to test packaged ICs under the extreme temperature conditions in which the IC may be required to operate. However, we believe that temperature-controlled testing will be an increasingly important part of front-end wafer testing as more parameters traditionally tested in back end-test are moved to front-end test.

*Trends in IC Testing*

ATE is used to identify unacceptable packaged ICs and bad die on wafers. ATE assists IC manufacturers in controlling test costs by performing IC testing in an efficient and cost-effective manner. In order to provide testing equipment that can help IC manufacturers meet these goals, we believe the ATE market must address the following issues:

*Change in Technology.* End-user applications are demanding ICs with increasingly higher performance, greater speeds, and smaller sizes. ICs that meet these higher standards, including SOC designs, are more complex and dense. These technology trends have significant implications for the IC testing process, including:

- the need for test heads of higher complexity;
- higher signal densities;
- increasing test speeds; and
- a new generation of testers for SOC and other technologies.

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*Need for Plug-Compatibility and Integration.* Semiconductor manufacturers need test methodologies that will perform increasingly complex tests while lowering the overall cost of testing. This can require combining ATE manufactured by various companies into optimally performing systems. Semiconductor manufacturers have to work closely with various test hardware, software, interface and component vendors to resolve design and compatibility issues in order to make these vendors' products plug-compatible with test equipment manufactured by other vendors.

*Testing Under Extreme Conditions.* ICs will have to perform across a wider spectrum of temperature and environmental conditions than ever before because of the growing complexity of products in which they are deployed. In recent years, temperature testing has found an increasing role in front-end, wafer-level testing. Creating a uniform thermal profile over much larger wafer areas represents a significant engineering and design challenge for ATE manufacturers.

*Demand for Higher Levels of Technical Support.* As IC testing becomes more complex, semiconductor manufacturers demand higher levels of technical support on a routine basis. ATE manufacturers must commit appropriate resources to technical support in order to develop close working relationships with their customers. This level of support also requires close proximity of service and support personnel to customers' facilities.

*Cost Reduction Through Increased Front-End Testing.* As the cost of testing ICs increases, semiconductor manufacturers will continue to look for ways to streamline the testing process to make it more cost-effective, such as the trend to use massive parallel testing, in which semiconductor manufacturers test multiple ICs on the wafer simultaneously. We believe that this factor will lead to more front-end, wafer-level testing.

## OUR SOLUTIONS

Historically, we have focused our development efforts on designing and producing high quality products that provide superior performance and cost-effectiveness. We have sought to address each manufacturer's individual needs through innovative and customized designs, use of the best materials available, quality manufacturing practices and personalized service. We have designed solutions to overcome the evolving challenges facing the ATE market and other markets that we serve, which we believe provide the following advantages:

*Temperature-Controlled Testing.* Our Thermostream<sup>(R)</sup> products are used by manufacturers in a number of markets to stress test a variety of semiconductor and electronic components, printed circuit boards and sub-assemblies. Our Thermochuck<sup>(R)</sup> products are used by semiconductor manufacturers for front-end temperature stress screening at the wafer level. Factors motivating manufacturers to use temperature testing include design characterization, failure analysis and quality control as well as determining performance under extreme operating temperatures, all of which contribute to manufacturing cost savings. Our acquisitions of Sigma Systems Corporation ("Sigma"), in October 2008, and Thermonics, Inc. ("Thermonics"), in January 2012, have significantly increased our product offerings in the area of temperature-controlled testing and enabled us to begin serving customers in other markets outside the ATE market. Sigma's thermal platforms and temperature chambers can accommodate large thermal masses and are found in both laboratory and production environments. Thermonics' products provide a range of precision temperature forcing systems and have been melded into Temptronic's ATS ThermoStream product line. The Thermonics brand is now used to market a family of process chillers for test and industrial applications.

*Induction Heating Applications.* Our acquisition of Ambrell added induction heating capabilities to our product offerings, which can be used by customers in process applications where precision controlled heating is needed. Customers use our induction heating products in conjunction with other technologies in various manufacturing

environments to improve production efficiencies. Applications for our EKOHEAT<sup>(R)</sup> or EASYHEAT<sup>TM</sup> induction heating products include annealing, bonding, brazing, curing, forging, heat treating, melting, shrink-fitting and testing.

*Scalable, Universal, High Performance Interface Technology.* Our universal test head manipulators provide a high degree of positioning flexibility with a minimum amount of effort. As a result, our products can be used in virtually any test setting. Our manipulator products are designed to accommodate the increased size of test heads. Our docking hardware offers precise control over the connection to test sockets, probing assemblies and interface boards, reducing downtime and minimizing costly damage to fragile components. Our tester interface products optimize the integrity of the signals transmitted between the test head and the device under test by being virtually transparent to the test signals. This results in increased accuracy of the test data and may thus enable improved test yields. We believe that these characteristics will gain even more significance as testing becomes even more demanding.

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*Compatibility and Integration.* A hallmark of our products has been, and continues to be, compatibility with a wide variety of ATE. Our manipulator and docking hardware products are all designed to be used with otherwise incompatible ATE. We believe this integrated approach to ATE facilitates smooth changeover from one tester to another, longer lives for interface components, better test results, increased ATE utilization and lower overall test costs.

*Worldwide Customer Service and Support.* We have long recognized the need to maintain a physical presence near our customers' facilities. As of December 31, 2017, we had domestic manufacturing facilities in California, Massachusetts, New Jersey and New York and provided service to our customers from sales and service personnel based in the U.S., Europe and Asia. Our engineers are easily accessible to, and can work directly with, most of our customers from the time we begin developing our initial proposal, through the delivery, installation and use of the product by our customer. In this way, we are able to develop and maintain close relationships with our customers.

## OUR STRATEGIES

We remain committed to our goals of being recognized in our markets as the designer and manufacturer of the highest quality and most cost-effective products and becoming the key supplier of all of our customers' product needs. Our strategies to achieve these goals include the following:

*Pursuing Synergistic Acquisitions.* A key element of our growth strategy has been to acquire businesses, technologies or products that are complementary to our current product offerings. Since our initial public offering in 1997, we have acquired several businesses which have enabled us to expand our line of product offerings and have given us the opportunity to market a broader range of products to our customer base. In particular, the acquisitions of Temptronic in 2000, Sigma in 2008, Thermonics in 2012 and Ambrell in 2017 have provided access to markets that are less sensitive to cyclicity than the semiconductor market. We seek to make acquisitions that will further expand our product lines as well as increase our exposure to markets outside of the semiconductor market.

*Pursuing Revenue Growth Opportunities Outside the Semiconductor ATE Market.* Another element of our growth strategy is to pursue revenue growth opportunities in markets we have not traditionally served, such as the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. We believe that we may be able to reduce some of the cyclicity that we have historically experienced by further diversifying our revenue streams outside the semiconductor ATE market. We see the most potential for this within our Thermal segment. During 2017 and 2016, approximately \$29.0 million (including \$13.2 million of net revenues attributable to Ambrell), or 44%, and \$12.2 million, or 30%, respectively, of our total net revenues were derived from markets outside semiconductor. These revenues were all generated by our Thermal segment. We cannot determine at this time whether we will be successful in building our sales in these non-traditional markets or what the growth rate of our sales in these markets will be in future periods.

*Providing Technologically Advanced Solutions.* We are committed to designing and producing only the highest quality products which incorporate innovative designs to achieve optimal cost-effectiveness and functionality for each customer's particular situation. Our engineering and design staff is continually engaged in developing new and improved products and manufacturing processes.

*Leveraging Our Strong Customer Relationships.* Our technical personnel work closely with ATE manufacturers to design tester interface and docking hardware that are compatible with their ATE. As a result, we are often privy to proprietary technical data and information about these manufacturers' products. We believe that because we do not compete with ATE manufacturers in the prober, handler and tester markets, we have been able to establish strong collaborative relationships with these manufacturers that enable us to develop ancillary ATE products on an

accelerated basis. Engineering is also at the heart of the thermal segment where customers often return to inTEST with their next thermal challenge. We work to cement relationships with customers that have demanding specifications whether it be thermal testing at temperature extremes for aerospace application, for example, or delivering precise heating for efficient industrial processes. We believe that with our capabilities to consistently demonstrate solutions from proof of concept to manufactured products with required specifications, we can continue to strengthen our customer relationships.

*Maintaining Our International Presence.* Our existing and potential customers are concentrated in certain regions throughout the world. We believe that we must maintain a presence in the markets in which our customers operate. We currently have offices in the U.S., Germany, Singapore, the Netherlands and the U.K.

*Controlling Costs.* At the same time as we are pursuing growth opportunities, we will seek ways to more aggressively streamline our cost structure, so that we are positioned to offer products at prices that provide the margin for a reasonable profit as well as the resources for continual product development.

#### OUR SEGMENTS

In 2016, we reorganized our business from three product segments, Thermal Products, Mechanical Products and Electrical Products, into two product segments, Thermal and Electromechanical Semiconductor ("EMS"). Accordingly, effective January 1, 2017, we have two reportable segments, which are also our reporting units. Prior period information has been reclassified to be comparable to the presentation for 2017.

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Our Thermal segment consists of inTEST Thermal Solutions (“iTS”) which manufactures and sells products under the Temptronic, Sigma and Thermonics brand names and Ambrell, which we acquired in May 2017, as discussed above. iTS has operations in Massachusetts, Germany and Singapore. Ambrell has operations in New York, the Netherlands and the U.K. Customers use the thermal solutions produced by iTS for product development, characterization and production test applications. Ambrell provides customers with induction heating system solutions for conditioning, joining, and forming conductive materials in the manufacturing process. Our Thermal segment provides these solutions across an array of industries including automotive, consumer electronics, defense/aerospace, energy, industrial, semiconductor and telecommunications markets.

Our EMS segment consists of our manufacturing operations in New Jersey and California. Semiconductor manufacturers use our EMS solutions in back-end testing where our mechanical and electrical products serve production testing of wafers and specialized packaged ICs. These ICs include microprocessors, digital signal processing chips, mixed signal devices, MEMS (Micro-Electro-Mechanical Systems), application specific ICs and specialized memory ICs, and are used primarily in the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. We custom design most of our products for each customer's particular combination of ATE.

### Thermal Products

Our thermal products are sold into the environmental test market encompassing a wide variety of markets including the ATE, automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. Our thermal products enable a manufacturer to test semiconductor wafers and ICs, electronic components and assemblies, mechanical assemblies and electromechanical assemblies. Our thermal products provide the ability to characterize and stress test a variety of materials over extreme and variable temperature conditions that can occur in actual use.

*ThermoStream<sup>(R)</sup> Products:* Our ThermoStream<sup>(R)</sup> products are used in the semiconductor market as a stand-alone temperature management tool, or in a variety of electronic test applications as part of our MobileTemp systems. ThermoStream<sup>(R)</sup> products provide a source of heated and cooled air which can be directed over the component or device under test. These systems are capable of controlling temperatures to within +/- 0.1 degree Celsius over a range of -100 degrees Celsius to as high as +300 degrees Celsius within 1.0 degree Celsius of accuracy. As a stand-alone tool, ThermoStreams<sup>(R)</sup> provide a temperature-controlled air stream to rapidly change and stabilize the temperature of packaged ICs and other devices.

Our MobileTemp Series combines our ThermoStream<sup>(R)</sup> products with our family of exclusive, high-speed ThermoChambers to offer thermal test systems with fast, uniform temperature control in a compact package enabling temperature testing at the test location. MobileTemp Systems are designed specifically for small thermal-mass applications beyond the semiconductor market and have found application in the automotive, electronic, fiber optic and oil field service markets testing such things as electronic sub-assemblies, sensor assemblies, and printed circuit boards.

Traditionally, our customers used ThermoStream<sup>(R)</sup> products primarily in engineering, quality assurance and small-run manufacturing environments. However, increasingly, our customers use ThermoStream<sup>(R)</sup> products in longer-run production applications. ThermoStream<sup>(R)</sup> and MobileTemp products range in price from approximately \$15,000 to \$50,000.

*ThermoChambers:* Our chamber products are available in a variety of sizes, from small bench-top units to chambers with internal volumes of twenty-seven cubic feet and greater and with temperature ranges as wide as from -190



degrees Celsius to +500 degrees Celsius. Chambers can be designed to utilize liquid nitrogen or liquid carbon dioxide cooling or mechanical refrigeration, and sometimes both. These chambers can accommodate large thermal masses and are found in both laboratory and production environments. Chambers are priced from \$15,000 to \$150,000.

*Thermal Platforms:* Our platforms are available in surface sizes ranging from 7.2 square inches to 616 square inches. They provide a flat, thermally conductive, precisely temperature controllable surface that is ideal for conditioning of testing devices with a flat surface. Platforms are available with temperature ranges as broad as -100 degrees Celsius to +250 degrees Celsius. Thermal platforms can be designed to utilize either liquid nitrogen or liquid carbon dioxide cooling or mechanical refrigeration. Platforms offer virtually unimpeded access to the device under test and their easy access and compact size makes them ideal for convenient bench-top use. Platforms are priced from \$6,500 to \$65,000.

*ThermoChuck<sup>(R)</sup> Products:* Our ThermoChuck<sup>(R)</sup> precision vacuum platform assemblies, used primarily in the semiconductor market, quickly change and stabilize the temperature of semiconductor wafers accurately and uniformly during testing without removing the wafer from its testing environment. Such temperatures can range from as low as -65 degrees Celsius to as high as +300 degrees Celsius. ThermoChucks<sup>(R)</sup> are incorporated into wafer prober equipment for laboratory analysis and for in-line production testing of semiconductor wafers. ThermoChuck<sup>(R)</sup> products range in price from approximately \$25,000 to \$120,000.

*Thermonics<sup>(R)</sup> Products:* Our Thermonics temperature conditioning products provide tempered gas or fluid to enable customers to maintain desired thermal conditions within their tool or process. Applications include general industrial, chemical processing, energy, electronics, automotive, mil/aero and semiconductor markets. Prices range from \$20,000 to greater than \$200,000.

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*EKOHEAT<sup>(R)</sup> Products:* Our EKOHEAT<sup>(R)</sup> induction heating systems with power ratings from 10KW to 500KW are manufactured by Ambrell and are used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. Prices range from \$25,000 to \$250,000.

*EASYHEAT<sup>TM</sup> Products:* Our compact EASYHEAT<sup>TM</sup> induction heating systems with power ratings from 1KW to 10KW are manufactured by Ambrell are used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. Prices range from \$5,000 to \$25,000.

Applications for both EKOHEAT<sup>(R)</sup> and EASYHEAT<sup>TM</sup> products include annealing, bonding, brazing, curing, forging, heat treating, melting, shrink-fitting, soldering and testing.

## EMS Products

*Manipulator Products.* We offer two lines of manipulator products: the in2<sup>(R)</sup> and the Cobal Series. These free-standing universal manipulators can hold a variety of test heads and enable an operator to reposition a test head for alternate use with any one of several probers or handlers on a test floor.

The in2<sup>(R)</sup> and Cobal Series of manipulator products incorporate our balanced floating-head design. This design permits a test head weighing up to 1,100 pounds to be held in an effectively weightless state, so it can be moved manually or with optional powered assistance, up or down, right or left, forward or backward and rotated around each axis (known as six degrees of motion freedom) by an operator using a modest amount of force. The same design features enable the operator to dock the test head without causing inadvertent damage to the fragile electrical contacts. As a result, after testing a particular production lot of ICs, the operator can quickly and easily disconnect a test head that is held in an in2<sup>(R)</sup> manipulator and equipped with our docking hardware and dock it to another electronic device handler for testing either a subsequent lot of the same packaged ICs or to test different ICs. The in2<sup>(R)</sup> and Cobal Series manipulators range in price from approximately \$12,000 to \$60,000.

*Docking Hardware Products.* We offer two lines of docking hardware products: fixed manual docking and Intellidock pin and cup docking. Both types protect the delicate interface contacts and ensure proper repeatable and precise alignment between the test head's interface board and the prober's probing assembly or the handler's test socket as they are brought together, or "docked." Fixed manual docking includes a mechanical cam mechanism to dock and lock the test head to the prober or handler. Intellidock is an automated docking solution that provides operator feedback for each docking step via a touchscreen display. Both types eliminate motion of the test head relative to the prober or handler. This minimizes deterioration of the interface boards, test sockets and probing assemblies which is caused by constant vibration during testing. Our docking hardware products are used primarily with floating-head universal manipulators when maximum mobility and inter-changeability of handlers and probers between test heads is required. By using our docking hardware products, semiconductor manufacturers can achieve cost savings through improved ATE utilization, improved accuracy and integrity of test results, and reduced repairs and replacements of expensive ATE interface products.

We believe our docking hardware products offer our customers the ability to make various competing brands of test heads compatible with various brands of probers and handlers by only changing interface boards. This is called "plug-compatibility." Plug-compatibility enables increased flexibility and utilization of test heads, probers and handlers purchased from various ATE manufacturers. We believe that because we do not compete with ATE manufacturers in the sale of probers, handlers or testers, ATE manufacturers are willing to provide us with the information that is integral to the design of plug-compatible products. Our docking hardware products range in price from approximately \$2,000 to \$25,000.

*Interface Products.* Our tester interface products provide the electrical connections between the tester and the wafer prober or IC handler to carry the electrical signals between the tester and the probe card on the prober or the test socket on the handler. Our designs optimize the integrity of the transmitted signal. Therefore, our tester interfaces can be used with high speed, high frequency, digital or mixed signal testers used in testing more complex ICs. Because our tester interface products enable the tester to provide more reliable yield data, our interfaces may also reduce IC production costs. We design standard and modular interface products to address most possible tester/prober combinations on the market today. In addition, we provide a custom design service that will allow any of our customers to use virtually any tester, prober or handler combination with any type of device, such as analog, digital, mixed signal and radio frequency. For example, our Centaur<sup>(R)</sup> modular interface is designed to provide flexibility and scalability through the use of replaceable signal modules which can be easily changed on the test floor as our customers' testing requirements change. In addition to the Centaur<sup>(R)</sup> modular interface, we also offer over 200 different types of tester interface models that we custom designed for our customers' specific applications. These tester interface products range in price from approximately \$7,000 to \$110,000.

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Financial Information About Product Segments and Geographic Areas

Please see Note 16 of our consolidated financial statements included in Item 8 of this Report on Form 10-K for additional data regarding net revenues, profit or loss and total assets of each of our segments and revenues attributable to foreign countries.

MARKETING, SALES AND CUSTOMER SUPPORT

We market and sell our products primarily in markets where semiconductors are manufactured. North American and European semiconductor manufacturers, as well as third-party foundries, test and assembly providers, have located most of their back-end factories in Southeast Asia. The front-end wafer fabrication plants of U.S. semiconductor manufacturers are primarily in the U.S. Likewise, European, Taiwanese, South Korean and Japanese semiconductor manufacturers generally have located their wafer fabrication plants in their respective countries. We have been providing a greater number of engineered solutions to non-semiconductor markets. These are thermal-based solutions that fall into the categories of test and process, involving automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets.

*Thermal Products:* We market our thermal products brands, Temptronic, Sigma and Thermonics, under the umbrella name of inTEST Thermal Solutions and sales to ATE manufacturers are handled directly by our own sales force. Sales to semiconductor manufacturers and customers in other markets in the U.S. are handled through independent sales representative organizations. In Singapore and Malaysia, our sales and service are handled through our internal sales and service staff. In the rest of Asia, our sales are handled through distributors. In Europe, sales managers at our office in Germany, as well as regional distributors and independent sales representatives, sell to semiconductor manufacturers and customers in other markets. We visit our distributors regularly and have trained them to sell and service our thermal products.

We market our EASYHEAT™ and EKOHEAT® precision induction heating equipment to manufacturers who require specialized industrial heating in a wide array of industries including automotive, aerospace and semiconductor and are sold globally through a combination of regional sales and strategic account managers and independent distributors. In North America and Europe, direct regional sales managers provide sales coverage augmented by distributors in Mexico and three European countries. Our strategic account managers cover targeted segments and create and manage relationships with key management personnel. In Asia, seven distributors have responsibility for sales and service of our products.

We also provide induction heating product support through our SmartCARE Service offering, which includes equipment repairs and training, preventative maintenance, enhanced warranties and spare parts. Our field service engineers, located in the U.S. and Europe, provide service and support globally. Additionally, a number of distributors in North America, Europe and Asia have factory-trained service technicians.

*EMS Products:* In North America, we sell to semiconductor manufacturers principally through the use of independent, commissioned sales representatives. North American sales representatives also coordinate product installation and support with our technical staff and participate in trade shows.

Our internal sales account managers handle sales to ATE manufacturers and are responsible for a portfolio of customer accounts and for managing certain independent sales representatives. In addition, our sales account managers are responsible for pricing, quotations, proposals and transaction negotiations, and they assist with applications engineering and custom product design. Technical support is provided to North American customers and

independent sales representatives by employees based in New Jersey, California and Texas.

In Europe, we sell to semiconductor and ATE manufacturers through our internal sales staff. Technical support is provided by our staff in the U.K. In China, Japan, the Philippines, South Korea, and Thailand, we sell through the use of independent sales representatives who are supervised by our internal sales staff. In Malaysia, Singapore and Taiwan, our sales are handled by our internal sales staff. International sales representatives are responsible for sales, installation, support and trade show participation in their geographic market areas. Technical support is provided to Asian customers primarily by employees based in Malaysia, the Philippines and Taiwan.

### CUSTOMERS

We market all of our products to end users, which include semiconductor manufacturers and third-party foundries, test and assembly providers, as well as to original equipment manufacturers ("OEMs"), which include ATE manufacturers and their third-party outsource manufacturing partners. In the case of thermal products, we also market our products to independent testers of semiconductors, manufacturers of automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications products, semiconductor research facilities, and manufacturers and manufacturing process integrators for a variety of industrial process applications. Our customers use our products principally in production testing, although our ThermoStream® products traditionally have been used largely in engineering development and quality assurance. We believe that we sell to most of the major semiconductor manufacturers in the world.

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During the years ended December 31, 2017 and 2016, Hakuto Co. Ltd., one of our distributors, accounted for 11% and 13% of our consolidated net revenues, respectively. These revenues were generated by our Thermal segment. During the years ended December 31, 2017 and 2016, Texas Instruments Incorporated accounted for 11% and 10% of our consolidated net revenues, respectively. While both of our operating segments sold products to this customer, these revenues were primarily generated by our EMS segment. Our ten largest customers accounted for approximately 46% and 50% of our consolidated net revenues in 2017 and 2016, respectively. The loss of any one or more of our largest customers, or a reduction in orders by a major customer, could materially reduce our net revenues or otherwise materially affect our business, financial condition or results of operations.

Our largest customers in 2017 include:

<u>Semiconductor Manufacturers</u>	<u>ATE Manufacturers</u>	<u>Other</u>
Analog Devices, Inc.	Teradyne, Inc.	Foxconn Optical Interconnect Technologies, Inc.
Cypress Semiconductor Corporation		Hakuto Co. Ltd.
NaigaiTEC Corporation		Rosendahl Nextrom GmbH
NXP Semiconductors N.V.		
STMicroelectronics N.V.		
Texas Instruments Incorporated		

MANUFACTURING AND SUPPLY

As of December 31, 2017, our principal manufacturing operations consisted of assembly and testing at our facilities in California, Massachusetts, New Jersey and New York. We assemble most of our products from a combination of standard components and custom parts that have been fabricated to our specifications by either third-party manufacturers or our own fabrication operation in New Jersey. Our practice is to use the highest quality raw materials and components in our products. The primary raw materials used in fabricated parts are all widely available. We purchase substantially all of our components from multiple suppliers. We purchase certain raw materials and components from single suppliers, however, we believe that all materials and components are available in adequate amounts from other sources, although from time to time, certain components may be in short supply because of high demand or the inability of some vendors to consistently meet our quality or delivery requirements.

We conduct inspections of incoming raw materials, fabricated parts and components using sophisticated measurement equipment. This includes testing with coordinate measuring machines in all but one of our manufacturing facilities to ensure that products with critical dimensions meet our specifications. We have designed our inspection standards to comply with applicable MIL specifications and ANSI standards.

Our Massachusetts facility is ISO 9001:2015 certified. Our New York facility is ISO 9001:2008 certified. Our New Jersey and California facilities manufacture products only for the semiconductor industry where ISO certification is not required. However, these locations do employ the practices embodied in the ISO 9001:2008.

ENGINEERING AND PRODUCT DEVELOPMENT

Our success depends on our ability to provide our customers with products and solutions that are well engineered, and to design those products and solutions before, or at least no later than, our competitors. As of December 31, 2017, we employed a total of 42 engineers, who were engaged in engineering and product development. In addition, when the demands of engineering and product development projects exceed the capacity or knowledge of our in-house staff, we

retain temporary third-party engineering and product development consultants to assist us. Our practice in many cases is to assign engineers to work with specific customers, thereby enabling us to develop the relationships and exchange of information that is most conducive to successful product development and enhancement. In addition, some of our engineers are assigned to new product research and development and have worked on such projects as the development of new types of universal manipulators, the redesign and development of new thermal products and the development of high performance interfaces.

Since most of our products are customized, we consider substantially all of our engineering activities to be engineering and product development. We spent approximately \$4.3 million in 2017 and \$3.7 million in 2016 on engineering and product development. 2017 expenses include \$650,000 attributable to Ambrell, which we acquired in May 2017.

#### PATENTS AND OTHER PROPRIETARY RIGHTS

Our policy is to protect our technology by filing patent applications for the technologies that we consider important to our business. We also rely on trademarks, trade secrets, copyrights and unpatented know-how to protect our proprietary rights. It is our practice to require that all of our employees and third-party product development consultants assign to us all rights to inventions or other discoveries relating to our business that were made while working for us. In addition, all employees and third-party product development consultants agree not to disclose any private or confidential information relating to our technology, trade secrets or intellectual property.

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As of December 31, 2017, we held 79 active U.S. patents and had 7 pending U.S. patent applications covering various aspects of our technology. Our acquisition of Ambrell during 2017 provided 30 of those US patents, as well as 1 US patent application. Our U.S. patents expire at various times beginning in 2018 and extending through 2035. During 2017, one U.S. patent was issued and we had two U.S. patents expire. We do not believe that the upcoming expiration of certain of our patents in 2018 will have a material impact on our business. We also hold foreign patents and file foreign patent applications, in selected cases corresponding to our U.S. patents and patent applications, to the extent management deems appropriate.

While we believe that our patents and other proprietary rights are important to our business, we also believe that, due to the rapid pace of technological change in the semiconductor equipment market, the successful manufacture and sale of our products also depends upon our engineering, manufacturing, marketing and servicing skills. In the absence of patent protection, we would be vulnerable to competitors who attempt to copy or imitate our products or processes. We believe our intellectual property has value, and we have taken in the past, and will take in the future, actions we deem appropriate to protect such property from misappropriation. There can be no assurance, however, that such actions will provide meaningful protection from competition. For additional information regarding risks related to our intellectual property, see "Risk Factors."

## COMPETITION

We operate in an increasingly competitive environment within both of our product segments. Some of our competitors have greater financial resources and more extensive design and production capabilities than we do. Certain markets in which we operate have become more fragmented, with smaller companies entering the market. These new smaller entrants typically have much lower levels of fixed operating overhead than we do, which enables them to be profitable with lower priced products. In order to remain competitive with these and other companies, we must be able to continue to commit a significant portion of our personnel, financial resources, research and development and customer support to developing new products and maintaining customer relationships worldwide.

Our competitors include independent manufacturers, ATE manufacturers and, to a lesser extent, semiconductor manufacturers' in-house ATE interface groups. Competitive factors in the markets we serve include price, functionality, timely product delivery, customer service, applications support, product performance and reliability. We believe that our long-term relationships with the industry's leading semiconductor manufacturers and other customers, and our commitment to, and reputation for, providing high quality products, are important elements in our ability to compete effectively in all of our markets.

Our principal competitors for Thermostream<sup>(R)</sup> products are FTS Systems, a part of SP Industries, and MPI Corporation. Our principal competitors for Thermochuck<sup>(R)</sup> products include Cascade Microtech, Inc., a subsidiary of FormFactor, Inc., ERS Elektronik GmbH and Espec Corp. Our principal competitors for environmental chambers are Cincinnati Sub-Zero Products, Inc., Espec Corp. and Thermotron Industries. Our principal competitor for thermal platforms is Environmental Stress Systems Inc. Our principal competitors for EKOHEAT<sup>(R)</sup> and EASYHEAT<sup>TM</sup> products are Inductotherm Corporation, Ajax-Tocco Magneticthermic, EFD Induction Corporation, Trumpf Huettinger GmbH, and Ceia Loge.

Our principal competitors for manipulator products are Advantest Corporation, Esmo AG, Reid-Ashman Manufacturing and Teradyne, Inc. Our principal competitors for docking hardware products include Advantest Corporation, Esmo AG, Knight Automation, Reid-Ashman Manufacturing and Teradyne, Inc. Our principal competitors for tester interface products are Advantest Corporation, Esmo AG, Reid-Ashman Manufacturing and Teradyne, Inc.

## BACKLOG



At December 31, 2017, our backlog of unfilled orders for all products was approximately \$13.7 million compared with approximately \$7.4 million at December 31, 2016. At December 31, 2017, our backlog included \$5.5 million attributable to Ambrell. Our backlog includes customer orders which we have accepted, substantially all of which we expect to deliver in 2018. While backlog is calculated on the basis of firm purchase orders, a customer may cancel an order or accelerate or postpone currently scheduled delivery dates. Our backlog may be affected by the tendency of customers to rely on shorter lead times available from suppliers, including us, in periods of depressed demand. In periods of increased demand, there is a tendency towards longer lead times that has the effect of increasing backlog. As a result of these factors, our backlog at a particular date is not necessarily indicative of sales for any future period.

#### EMPLOYEES

At December 31, 2017, we had 199 full time employees, including 101 in manufacturing operations, 61 in customer support/operations and 37 in administration. Substantially all of our key employees are highly skilled and trained technical personnel. None of our employees are represented by a labor union, and we have never experienced a work stoppage. From time to time we retain third-party contractors to assist us in manufacturing operations and engineering and product development projects.

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ADDITIONAL INFORMATION

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and amendments to these reports that are filed with the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act, are available free of charge through our website (www.intest.com) as soon as reasonably practicable after we electronically file them with, or furnish them to, the SEC. We also routinely post press releases, presentations, webcasts and other information regarding the Company on our website. The information posted to our website is not part of this Report.

**Item 1A. RISK FACTORS**

The following are some of the factors that could materially and adversely affect our future performance or could cause actual results to differ materially from those expressed or implied in our forward-looking statements. The risks and uncertainties described below are not the only ones facing us and we cannot predict every event and circumstance that may adversely affect our business. However, these risks and uncertainties are the most significant factors that we have identified at this time. If one or more of these risks actually occurs, our business, results of operations and/or financial condition could suffer, and the price of our stock could be negatively affected.

**We seek to acquire additional businesses. If we are unable to do so, our future rate of growth may be reduced or limited. We may incur significant expenses related to due diligence or other transaction-related expenses for a proposed acquisition that may not be completed.**

A key element of our growth strategy is to acquire businesses, technologies or products that are complementary to our current product offerings. We seek to make acquisitions that will further expand our product lines as well as reduce our overall reliance on the ATE market. We may not be able to execute our acquisition strategy if:

- we are unable to identify suitable businesses, technologies or products to acquire;
- we do not have sufficient cash or access to required capital at the necessary time;
- we are unwilling or unable to outbid larger, more resourceful companies; or
- we are unable to successfully close proposed acquisitions.

**Our acquisition strategy involves financial and management risks which may adversely affect our results in the future.**

If we acquire additional businesses, technologies or products, we will face the following additional risks:

- future acquisitions could divert management's attention from daily operations or otherwise require additional management, operational and financial resources;
- we might not be able to integrate future acquisitions into our business successfully or operate acquired businesses profitably;

we may realize substantial acquisition related expenses which would reduce our net earnings in future years; and our investigation of potential acquisition candidates may not reveal problems and liabilities of the companies that we acquire.

If any of the events described above occur, our earnings could be reduced. If we issue shares of our stock or other rights to purchase our stock in connection with any future acquisitions, we would dilute our existing stockholders' interests and our earnings per share may decrease. If we issue debt in connection with any future acquisitions, lenders may require that we pledge our assets to secure repayment of such debt and impose covenants on us which could, among other things, restrict our ability to increase capital expenditures or to acquire additional businesses.

**Our business is subject to intense competition, which has in the past and could in the future, materially adversely affect our business, financial condition and results of operations.**

We face significant competition throughout the world in each of our product segments. Some of our competitors have substantial financial resources and more extensive design and production capabilities than we do. Some of our competitors are much smaller than we are, and therefore have much lower levels of overhead than we do, which enables them to sell their competing products at lower prices. In order to remain competitive, we must be able to continually commit a significant portion of our personnel and financial resources to developing new products and maintaining customer satisfaction worldwide. We expect our competitors to continue to improve the performance of their current products and introduce new products or technologies. Over the last several years, in response to significant declines in global demand for our products, some competitors have reduced their product pricing significantly, which has led to intensified price based competition, which has and could continue to materially adversely affect our business, financial condition and results of operations.

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**Our sales are affected by the cyclical and seasonality of the semiconductor and ATE markets, which causes our operating results to fluctuate significantly.**

Our business depends in significant part upon the capital expenditures of semiconductor manufacturers. Capital expenditures by these companies depend upon, among other things, the current and anticipated market demand for semiconductors and the products that utilize them. Typically, semiconductor manufacturers curtail capital expenditures during periods of economic downturn. Conversely, semiconductor manufacturers increase capital expenditures when market demand requires the addition of new or expanded production capabilities or the reconfiguration of existing fabrication facilities to accommodate new products. In addition to being cyclical, the ATE market has also developed a seasonal pattern in the last several years, with the second and third quarters being the periods of strong demand and the first and fourth quarters being periods of weakened demand. We believe this change has been driven by the strong demand for consumer products containing semiconductor content sold during the year-end holiday shopping season. These market changes and seasonal sales pattern have contributed in the past, and will likely continue to contribute in the future, to fluctuations in our operating results.

**We seek to further diversify the markets for our thermal products in order to increase the proportion of our sales attributable to markets which are less subject to cyclical than the semiconductor and ATE markets. If we are unable to do so, our future performance will remain substantially exposed to the fluctuations of the cyclical of the semiconductor and ATE markets.**

Since 2009, we have sold our thermal products in markets outside of the semiconductor market, including the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. During 2017 and 2016, our sales to these non-semiconductor markets were \$29.0 million (including \$13.2 million of net revenues attributable to Ambrell) and \$12.2 million, respectively, and represented 44% and 30% of our consolidated net revenues, respectively. Prior to our acquisition of Ambrell, we offered only highly specialized engineering solutions in these markets outside the semiconductor market, the demand for which is limited and which we expect may vary significantly from period to period. Our goal is to increase our sales into these and other non-semiconductor markets; however, in most cases, the expansion of our thermal product sales into these new markets has occurred in the last several years, and we may experience difficulty in expanding our sales efforts further into these markets. These difficulties could include hiring sales and marketing staff with sufficient experience selling into these new markets and our ability to continue to develop products which meet the needs of customers in these markets and which are not currently offered by our competitors. In addition, due to the highly specialized nature of certain of our product offerings in these non-semiconductor markets, we do not expect broad market penetration in many of these markets. If we are unable to expand our sales in non-semiconductor markets, our net revenues and results of operations will remain substantially dependent upon the cycles of the semiconductor and ATE markets.

**Changes in the buying patterns of our customers have affected, and may continue to affect, demand for our products and our gross and net operating margins. Such changes in patterns are difficult to predict and may not be immediately apparent.**

In addition to the cyclical and seasonality of the semiconductor and ATE markets, demand for our products and our gross and net operating margins have also been affected by changes in the buying patterns of our customers. We believe that in recent years there have been a variety of changes within the ATE market, including, for example, changing product requirements, longer time periods between new product offerings by OEMs and changes in customer buying patterns. In particular, demand for the products sold by EMS, which are sold exclusively within the ATE market, and our operating margins in these product segments have been affected by shifts in the competitive landscape, including (i) customers placing heightened emphasis on shorter lead times (which places increased demands on our available engineering and production capacity increasing unit costs) and ordering in smaller quantities

(which prevents us from acquiring component materials in larger volumes at lower cost and increasing unit costs), (ii) the increasing practice of OEMs specifying other suppliers as primary vendors, with less frequent opportunities to compete for such designations, (iii) customers requiring products with a greater range of use at the lowest cost, and (iv) customer supply chain management groups demanding lower prices and spreading purchases across multiple vendors. These shifts in market practices have had, and may continue to have, varying degrees of impact on our net revenues and our gross and net operating margins. Such shifts are difficult to predict and may not be immediately apparent, and the impact of these practices is difficult to quantify from period to period. There can be no assurance that we will be successful in implementing effective strategies to counter these shifts.

**We generate a large portion of our sales from a small number of customers. If we were to lose one or more of our large customers, operating results could suffer dramatically.**

During the years ended December 31, 2017 and 2016, Hakuto Co. Ltd., one of our distributors, accounted for 11% and 13% of our consolidated net revenues, respectively. These revenues were generated by our Thermal segment. During the years ended December 31, 2017 and 2016, Texas Instruments Incorporated accounted for 11% and 10% of our consolidated net revenues, respectively. While both of our operating segments sold products to this customer, these revenues were primarily generated by our EMS segment. Our ten largest customers accounted for approximately 46% and 50% of our consolidated net revenues in 2017 and 2016, respectively. The loss of any one or more of our largest customers, or a reduction in orders by a major customer, could materially reduce our net revenues or otherwise materially affect our business, financial condition or results of operations.

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**Our operating results often change significantly from quarter to quarter and may cause fluctuations in our stock price.**

Historically, our operating results have fluctuated significantly from quarter to quarter. We believe that these fluctuations occur primarily due to the cycles of demand in the semiconductor manufacturing industry. In addition to the changing cycles of demand in the semiconductor manufacturing industry, other factors that have caused our quarterly operating results to fluctuate in the past, and that may cause fluctuations and losses in the future, include:

- contingent consideration liability adjustments;
- changes in demand in the markets we serve outside the ATE market including the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunication markets;
- the state of the U.S. and global economies;
- changes in the buying patterns of our customers;
- changes in our market share;
- the technological obsolescence of our inventories;
- quantities of our inventories greater than is reasonably likely to be utilized in future periods;
- fluctuations in the level of product warranty charges;
- competitive pricing pressures;
- costs related to due diligence and transaction-related expenses for a proposed acquisition that does not get completed;
- costs and timing of integration of our acquisitions and plant consolidations and relocations;
- excess manufacturing capacity;
- our ability to control operating costs;
- delays in shipments of our products;
- the mix of our products sold;
- the mix of customers and geographic regions where we sell our products;
- changes in the level of our fixed costs;
- costs associated with the development of our proprietary technology;
- our ability to obtain raw materials or fabricated parts when needed;
- increases in costs of component materials;
- cancellation or rescheduling of orders by our customers;
- changes in government regulations; and
- political or economic instability.

Because the market price of our common stock has tended to vary based on, and in relation to, changes in our operating results, fluctuations in the market price of our stock are likely to continue as variations in our quarterly results continue.

**In connection with our acquisition of Ambrell in May 2017, we agreed to contingent consideration in the form of earnouts based on the future adjusted EBITDA of Ambrell for 2017 and 2018. Significant variation in the amount of the estimated fair value of contingent consideration from period to period is possible which could have a materially adverse effect on our results of operations.**

The consideration paid for the acquisition of Ambrell, which we acquired in May 2017, includes contingent consideration in the form of earnouts based on the future adjusted EBITDA of Ambrell. Adjusted EBITDA is earnings

(or loss) from operations before interest expense, benefit or provision for income taxes, depreciation and amortization, and excludes other non-recurring income and expense items as defined in the stock purchase agreement for Ambrell. The first earnout, to be paid after calendar year 2017 is completed, is an amount equal to 8x Ambrell's adjusted EBITDA for 2017 minus the \$22 million paid at closing. At December 31, 2017, we had accrued \$5.4 million as the 2017 earnout payable on our balance sheet representing the amount of the first earnout. The second earnout, if any, to be paid after calendar year 2018 is completed, will be an amount equal to 8x Ambrell's adjusted EBITDA for 2018 minus the sum of the \$22 million paid at closing and the earnout paid with respect to 2017. The 2017 and 2018 earnouts, in the aggregate, are capped at \$18 million. To estimate the fair value of the contingent consideration at the acquisition date, an option based income approach using a Monte Carlo simulation model was utilized due to the non-linear payout structure. This resulted in an estimated fair value of \$4.1 million, which was recorded as a contingent consideration liability as of the acquisition date. At December 31, 2017, the estimated fair value of our contingent consideration liability had increased to \$11.1 million, and, accordingly, during the second half of 2017, we recorded a \$7.0 million increase in the amounts accrued for contingent consideration. We use this same option based income approach to estimate the fair value of the contingent consideration as of the end of each quarter. Significant variation in the amount of the estimated fair value of contingent consideration from period to period is possible as the fair value is affected by our then current estimation of future events including future net revenues and other items that affect future projected adjusted EBITDA. Such variation could have a materially adverse effect on our results of operations.

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**A breach of our operational or security systems could negatively affect our business and results of operations.**

We rely on various information technology networks and systems, some of which are managed by third parties, to process, transmit and store electronic information, including confidential data, and to carry out and support a variety of business activities, including manufacturing, research and development, supply chain management, sales and accounting. A failure in or a breach of our operational or security systems or infrastructure, or those of our suppliers and other service providers, including as a result of cyberattacks, could disrupt our business, result in the disclosure or misuse of proprietary or confidential information, damage our reputation, cause losses and significantly increase our costs. In addition, domestic and international regulatory agencies have implemented, and are continuing to implement, various reporting and remediation requirements that companies must comply with upon learning of a breach. While we have insurance that may protect us from incurring some of these costs, there is no assurance that such insurance coverage is adequate to cover all costs and damages incurred in connection with a cyberattack.

**Our industry is subject to rapid technological change, and our business prospects would be negatively affected if we are unable to quickly and effectively respond to innovation in the semiconductor and ATE markets.**

Semiconductor technology continues to become more complex as manufacturers incorporate ICs into an increasing variety of products. This trend, and the changes needed in automated testing systems to respond to developments in the semiconductor market, are likely to continue. We cannot be certain that we will be successful or timely in developing, manufacturing or selling products that will satisfy customer needs or that will attain market acceptance. Our failure to provide products that effectively and timely meet customer needs or gain market acceptance will negatively affect our business prospects.

**If our suppliers do not meet product or delivery requirements, we could have reduced revenues and earnings.**

Certain components may be in short supply from time to time because of high demand or the inability of some vendors to consistently meet our quality or delivery requirements. A significant portion of our material purchases require some custom work and there are not always multiple suppliers capable of performing such custom work on a timely or cost effective basis. If any of our suppliers were to cancel commitments or fail to meet quality or delivery requirements needed to satisfy customer orders for our products, we could lose time-sensitive customer orders, have reduced revenues and earnings, and be subject to contractual penalties, any of which could have a material adverse effect on our business, results of operations and financial condition.

**Our business may suffer if we are unable to attract and retain key employees.**

The loss of key personnel could adversely affect our ability to manage our business effectively. Our future success will depend largely upon the continued services of our senior management and other key employees or the development of successors with commensurate skills and talents. In the past, during periods of weakened demand which has caused us to experience operating losses, we have implemented temporary salary and benefit reductions and eliminations that have remained in place until our operations returned to profitability. If global economic conditions were to deteriorate and we were to implement such salary and benefit reductions or eliminations again, or if we cannot continue to increase employee salaries and maintain employee benefits commensurate with competitive opportunities, we may not be able to retain our senior management and other key employees. Our business could suffer if we were to lose one of more of our senior officers or other key employees.

**A substantial portion of our customers are located outside the U.S., which exposes us to foreign political and economic risks.**

We have operated internationally for many years and expect to expand our international operations as necessary to



continue expansion of our sales and service to our non-U.S. customers. Our foreign subsidiaries generated 17% and 16% of consolidated net revenues in 2017 and 2016, respectively. Net revenues from foreign customers totaled \$46.6 million, or 70% of consolidated net revenues in 2016, and \$27.2 million, or 68% of consolidated net revenues in 2016. We expect our net revenues from foreign customers will continue to represent a significant portion of total net revenues. However, in addition to the risks generally associated with sales and operations in the U.S., sales to customers outside the U.S. and operations in foreign countries are subject to additional risks, which may, in the future, affect our operations. These risks include:

- political and economic instability in foreign countries;
- the imposition of financial and operational controls and regulatory restrictions by foreign governments;
- the need to comply with a wide variety of U.S. and foreign import and export laws;
- local business and cultural factors that differ from our normal standards and practices, including business practices that we are prohibited from engaging in by the Foreign Corrupt Practices Act and other anti-corruption laws and regulations;
- trade restrictions;
- changes in tariffs and taxes;
- longer payment cycles;
- fluctuations in currency exchange rates; and
- the greater difficulty of administering business abroad.

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**A significant portion of our cash position is maintained overseas and we may not be able to repatriate cash from overseas which could have an adverse effect on our financial condition.**

While much of our cash is in the U.S., a significant portion is generated from and maintained by our foreign operations. As of December 31, 2017, \$2.5 million of our cash and cash equivalents was held by our foreign subsidiaries. Our financial condition and results of operations could be adversely impacted if we are unable to maintain a sufficient level of cash flow in the U.S. to address our cash requirements or we are unable to efficiently and timely repatriate cash from overseas. Any payment of distributions, loans or advances to us by our foreign subsidiaries could be subject to restrictions on, or taxation of, dividends or repatriation of earnings under applicable local law, monetary transfer restrictions and foreign currency exchange regulations in the jurisdictions in which our subsidiaries operate. If we are unable to repatriate the earnings of our subsidiaries it could have an adverse impact on our ability to redeploy earnings in other jurisdictions where they could be used more profitably.

**We have experienced and may continue to experience significant variability in our effective tax rates and may have exposure to additional tax liabilities and costs.**

We are subject to paying income taxes in the U.S. and various other countries in which we operate. Our effective tax rate is dependent on where our earnings are generated and the tax regulations and the interpretation and judgment of administrative tax or revenue entities in the U.S. and other countries. We are also subject to tax audits in the countries where we operate. Any material assessment resulting from an audit from an administrative tax or revenue entity could negatively affect our financial results.

**Claims of intellectual property infringement by or against us could seriously harm our businesses.**

From time to time, we may be forced to respond to or prosecute intellectual property infringement claims to defend or protect our rights or a customer's rights. These claims, regardless of merit, may consume valuable management time, result in costly litigation or cause product shipment delays. Any of these factors could seriously harm our business and operating results. We may have to enter into royalty or licensing agreements with third parties who claim infringement. These royalty or licensing agreements, if available, may be costly to us. If we are unable to enter into royalty or licensing agreements with satisfactory terms, our business could suffer. In instances where we have had reason to believe that we may be infringing the patent rights of others, or that someone may be infringing our patent rights, we have asked our patent counsel to evaluate the validity of the patents in question, as well as the potentially infringing conduct. If we become involved in a dispute, neither the third parties nor the courts are bound by our counsel's conclusions.

Table of Contents**Item 1B. UNRESOLVED STAFF COMMENTS**

None.

**Item 2. PROPERTIES**

At December 31, 2017, we leased 9 facilities worldwide. The following chart provides information regarding each of our principal facilities that we leased at December 31, 2017:

<b>Location</b>	<b>Lease Expiration</b>	<b>Approx. Square Footage</b>	<b>Principal Uses</b>
Mansfield, MA	August 2021	52,700	Thermal segment operations.
Mt. Laurel, NJ	April 2021	54,897	Corporate headquarters and EMS segment operations.
Fremont, CA	October 2020	15,746	EMS segment operations.
Scottsville, NY	April 2018	54,869	Thermal segment operations (current principal facility for Ambrell)
Rochester, NY	April 2028	79,150	Thermal segment operations (principal facility for Ambrell to be occupied May 2018)

All of our facilities have space to accommodate our needs for the foreseeable future.

**Item 3. LEGAL PROCEEDINGS**

From time to time we may be a party to legal proceedings occurring in the ordinary course of business. We are not currently involved in any material legal proceedings.

**Item 4. MINE SAFETY DISCLOSURES**

Not applicable.

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**PART II**

**Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**

**Market for Common Stock**

Our common stock is traded on NYSE American LLC (“NYSE American”) under the symbol "INTT." The following table sets forth the high and low sale prices of our common stock, as reported on the NYSE American for the periods indicated. Sale prices have been rounded to the nearest full cent.

	<b>Sales Price</b>	
<u>2017</u>	<b>High</b>	<b>Low</b>
First Quarter	\$6.85	\$4.30
Second Quarter	8.95	5.96
Third Quarter	9.50	6.40
Fourth Quarter	10.25	7.70
<u>2016</u>		
First Quarter	\$4.69	\$3.43
Second Quarter	4.28	3.48
Third Quarter	4.15	3.65
Fourth Quarter	4.75	3.74

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On March 16, 2018, the closing price for our common stock as reported on the NYSE American was \$8.35. As of March 16, 2018, we had 10,473,558 shares outstanding that were held by approximately 1,000 beneficial and record holders.

No dividends were paid on our common stock in the years ended December 31, 2017 or 2016. We do not currently plan to pay cash dividends in the foreseeable future. Our current policy is to use any future earnings for reinvestment in the operation and expansion of our business, including possible acquisitions of other businesses, technologies or products. Payment of any future dividends will be at the discretion of our Board of Directors.

## Purchases of Equity Securities

There were no shares of our common stock repurchased by us or on our behalf during the quarter ended December 31, 2017.

On October 27, 2015, our Board of Directors authorized the repurchase of up to \$5.0 million of our common stock from time to time on the open market, in compliance with Rule 10b-18 under the Securities Exchange Act of 1934, or in privately negotiated transactions (the "2015 Repurchase Plan"). Repurchases may also be made under trading plans entered into with RW Baird & Co. (each a "10b5-1 Plan"), which permit shares to be repurchased when we might otherwise be precluded from doing so under insider trading laws. The 2015 Repurchase Plan does not obligate us to repurchase any particular amount of common stock and may be suspended or discontinued at any time without prior notice. The 2015 Repurchase Plan is funded using our operating cash flow or available cash. The timing, price and amount of any shares repurchased under the 2015 Repurchase Plan is determined by our management, based on our evaluation of market conditions and other factors. To date, all purchases have been made in accordance with 10b5-1 Plans which provided for purchases to be made so long as the price did not exceed a maximum price. Recently, the price of our shares has exceeded the cap. Management is considering new parameters for future purchases and may enter into a new 10b5-1 Plan at some point under those new parameters. As of December 31, 2017, all of the Company's 10b5-1 Plans had expired.

During 2017 and 2016, we repurchased 13,883 and 241,805 shares under the 2015 Repurchase Plan, respectively at a cost of \$62,000 and \$978,000, respectively. As of December 31, 2017, we had repurchased a total of 297,020 shares at a cost of \$1.2 million under the 2015 Repurchase Plan. All of the repurchased shares were retired.

## **Item 6. SELECTED FINANCIAL DATA**

The following table contains certain selected consolidated financial data of inTEST and is qualified by the more detailed Consolidated Financial Statements and Notes thereto included elsewhere in this Annual Report on Form 10-K and should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of

Operations" and the other financial information included in this Annual Report on Form 10-K.

	<b>Years Ended December 31,</b>				
	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
	(in thousands, except per share data)				
<b>Condensed Consolidated Statement of Operations Data:</b>					
Net revenues	\$66,801	\$40,227	\$38,889	\$41,796	\$39,426
Gross margin	34,690	20,378	18,698	20,462	19,015
Operating income	3,611	4,146	2,562	4,916	3,962
Net earnings	975	2,658	1,861	3,439	3,077
Net earnings per common share:					
Basic	\$0.09	\$0.26	\$0.18	\$0.33	\$0.30
Diluted	\$0.09	\$0.26	\$0.18	\$0.33	\$0.30
Weighted average common shares outstanding:					
Basic	10,285	10,314	10,473	10,432	10,364
Diluted	10,339	10,333	10,494	10,466	10,419

	<b>As of December 31,</b>				
	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
	(in thousands)				
<b>Condensed Consolidated Balance Sheet Data:</b>					
Cash and cash equivalents	\$13,290	\$28,611	\$25,710	\$23,126	\$19,018
Working capital	16,580	32,950	30,205	28,032	24,048
Total assets	62,493	42,844	39,984	38,738	35,481
Long-term obligations	8,786	-	-	-	-
Total stockholders' equity	39,288	37,788	35,925	34,368	31,149

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**Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

**Overview**

This MD&A should be read in conjunction with the accompanying consolidated financial statements.

Our business and results of operations are substantially dependent upon the demand for ATE by semiconductor manufacturers and companies that specialize in the testing of ICs. As further discussed below, on May 24, 2017, we acquired Ambrell, which sells its products almost exclusively to customers in the industrial market, which is a non-semiconductor market. We expect that the acquisition of Ambrell will significantly reduce our dependence on customers in the semiconductor market. We expect that our future orders and net revenues will be approximately equally split between the semiconductor and non-semiconductor markets. Demand for ATE is driven by semiconductor manufacturers that are opening new, or expanding existing, semiconductor fabrication facilities or upgrading equipment, which in turn is dependent upon the current and anticipated market demand for semiconductors and products incorporating semiconductors. Such market demand can be the result of market expansion, development of new technologies or redesigned products to incorporate new features, or the replacement of aging equipment. In addition, we continue to focus on design improvements and new approaches for our own products which contribute to our net revenues as our customers adopt these new products.

In the past, the semiconductor market has been highly cyclical with recurring periods of oversupply, which often have a severe impact on the semiconductor market's demand for ATE, including the products we manufacture. This can cause wide fluctuations in both our orders and net revenues and, depending on our ability to react quickly to these shifts in demand, can significantly impact our results of operations. Semiconductor and ATE market cycles are difficult to predict and in recent years have become more volatile and, in certain cases, shorter in duration. Because the market cycles are generally characterized by sequential periods of growth or declines in orders and net revenues during each cycle, year over year comparisons of operating results may not always be as meaningful as comparisons of periods at similar points in either up or down cycles. In addition, during both downward and upward cycles in our industry, in any given quarter, the trend in both our orders and net revenues can be erratic. This can occur, for example, when orders are canceled or currently scheduled delivery dates are accelerated or postponed by a significant customer or when customer forecasts and general business conditions fluctuate during a quarter.

In addition to being cyclical, the ATE market has also developed a seasonal pattern in the last several years, with the second and third quarters being the periods of strong demand and the first and fourth quarters being periods of weakened demand. We believe this change has been driven by the strong demand for consumer products containing semiconductor content sold during the year-end holiday shopping season.

Third-party market share statistics are not available for the products we manufacture and sell into the ATE market; therefore, comparisons of period over period changes in our market share are not easily determined. As a result, it is difficult to ascertain if ATE market volatility in any period is the result of macro-economic or customer-specific factors impacting ATE market demand, or if we have gained or lost market share to a competitor during the period.





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As part of our ongoing strategy to reduce the impact of semiconductor and ATE market volatility on our business operations, we continue to diversify our served markets to address the thermal test requirements of several other markets outside the semiconductor market. These include the automotive, consumer electronics, consumer product packaging, defense/aerospace, energy, fiber optics, industrial, telecommunications and other markets. We believe that these markets usually are less cyclical than the semiconductor and ATE markets. While market share statistics exist for some of the markets we serve outside the semiconductor market, due to the nature of our highly specialized product offerings in these non-semiconductor markets, we do not expect broad market penetration in many of these markets and, therefore, do not anticipate developing meaningful market shares in these non-semiconductor markets. In addition, our orders and net revenues in any given period in these markets do not necessarily reflect the overall trends in these non-semiconductor markets due to our limited market shares. Consequently, we are continuing to evaluate buying patterns and opportunities for growth in these non-semiconductor markets that may affect our performance. The level of our orders and net revenues from these non-semiconductor markets has varied in the past, and we expect will vary significantly in the future, as we work to build our presence in these markets and establish new markets for our products. As previously mentioned, Ambrell, which we acquired in May 2017, sells its products almost exclusively to customers in the industrial market, which is one of the non-semiconductor markets we serve. We expect that the acquisition of Ambrell will significantly increase our orders and net revenues from markets outside the semiconductor market. As a result, we expect that our future orders and net revenues will be approximately equally split between the semiconductor and non-semiconductor markets.

While the majority of our orders and net revenues are derived from the ATE market, our operating results do not always follow the overall trend in the ATE market in any given period. We believe that these anomalies may be driven by a variety of factors within the ATE market, including, for example, changing product requirements, longer time periods between new product offerings by OEMs and changes in customer buying patterns. In particular, demand for the products sold by EMS, which are sold exclusively within the ATE market, and our operating margins in these product segments have been affected by shifts in the competitive landscape, including (i) customers placing heightened emphasis on shorter lead times (which places increased demands on our available engineering and production capacity increasing unit costs) and ordering in smaller quantities (which prevents us from acquiring component materials in larger volumes at lower cost and increasing unit costs), (ii) the practice of OEMs specifying other suppliers as primary vendors, with less frequent opportunities to compete for such designations, (iii) the in-house manufacturing activities of OEMs building certain products we have historically sold to them, including manipulators, docking hardware and tester interfaces, which has had the impact of significantly reducing the size of the available market for those certain products, (iv) the role of third-party test and assembly houses in the ATE market and their requirement of products with a greater range of use at the lowest cost, (v) customer supply chain management groups demanding lower prices and spreading purchases across multiple vendors, and (vi) certain competitors aggressively reducing their products' sales prices (causing us to either reduce our products' sales prices to be successful in obtaining the sale or causing loss of the sale).

In addition, in recent periods we have seen instances where demand for ATE is not consistent for each of our product segments or for any given product within a particular product segment. This inconsistency in demand for ATE can be driven by a number of factors, but in most cases, we have found that the primary reason is unique customer-specific changes in demand for certain products driven by the needs of their customers or markets served. These shifts in market practices and customer-specific needs have had, and may continue to have, varying levels of impact on our operating results and are difficult to quantify or predict from period to period. Management has taken, and will continue to take, such actions it deems appropriate to adjust our strategies, products and operations to counter such shifts in market practices as they become evident.

## Acquisition

On May 24, 2017, we completed the acquisition of Ambrell by acquiring all of its outstanding capital stock. Ambrell

is a manufacturer of precision induction heating systems used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. The Ambrell acquisition complements our current thermal technologies and broadens our diverse customer base, allowing expansion within many non-semiconductor related markets, such as consumer product packaging, fiber-optics, automotive and other markets. This acquisition has been accounted for as a business combination using purchase accounting. The purchase price for Ambrell was \$22.6 million in cash. Additional consideration in the form of earnouts may be paid based upon a multiple of adjusted EBITDA for 2017 and 2018. The 2017 and 2018 earnouts, in the aggregate, are capped at \$18 million. As of December 31, 2017, we had accrued \$5.4 million in 2017 earnout payable based on Ambrell's 2017 adjusted EBITDA and \$5.7 million as a contingent consideration liability based on our current projections for Ambrell's 2018 adjusted EBITDA. For further discussion of the acquisition, see Notes 3 and 4 to our consolidated financial statements.

Table of ContentsOrders and Backlog

The following table sets forth, for the periods indicated, a breakdown of the orders received by product segment and market (in thousands).

	<b>Years Ended December 31,</b>		<b>Change</b>	
	<b>2017</b>	<b>2016</b>	<b>\$</b>	<b>%</b>
<b>Orders:</b>				
Thermal	\$43,953	\$27,287	\$16,666	61 %
EMS	25,058	17,985	7,073	39 %
	\$69,011	\$45,272	\$23,739	52 %
Semiconductor market	\$39,214	\$31,491	\$7,723	25 %
Non-semiconductor market	29,797	13,781	16,016	116 %
	\$69,011	\$45,272	\$23,739	52 %

Total consolidated orders for the year ended December 31, 2017 were \$69.0 million compared to \$45.3 million for the same period in 2016. During the year ended December 31, 2017, we recorded \$14.9 million in orders attributable to Ambrell, of which \$13.8 million were attributable to the industrial market, which is a non-semiconductor market. When adjusted to eliminate the impact of orders attributable to Ambrell, our consolidated orders for the year ended December 31, 2017 would have been \$54.1 million and would have increased \$8.8 million, or 20%, as compared to the same period in 2016. The increase reflects both strengthening in demand within the ATE market as well increased demand from customers in the telecommunications and defense/aerospace markets. The higher level of demand within the ATE market is being driven, in part, by the increasing number of ICs utilized in the automotive industry and the need to test those ICs. In addition, demand for ATE is also being driven by products which enable the Internet of Things (IoT) and the increasing number of ICs in consumer electronics and industrial applications.

When adjusted to eliminate the orders attributable to Ambrell, orders from customers in non-semiconductor markets for the year ended December 31, 2017 were \$16.0 million, or 30% of total consolidated orders, compared to \$13.8 million, or 30% of total consolidated orders for the same period in 2016. As previously mentioned, the increase in demand was primarily from customers in the telecommunications and, to a lesser extent, defense/aerospace markets. The level of our orders in these non-semiconductor markets has varied in the past, and we expect it will vary significantly in the future as we build our presence in these markets and establish new markets for our products.

At December 31, 2017, our backlog of unfilled orders for all products was approximately \$13.7 million compared with approximately \$7.4 million at December 31, 2016. At December 31, 2017, our backlog included \$5.5 million attributable to Ambrell. Our backlog includes customer orders which we have accepted, substantially all of which we expect to deliver in 2018. While backlog is calculated on the basis of firm purchase orders, a customer may cancel an order or accelerate or postpone currently scheduled delivery dates. Our backlog may be affected by the tendency of customers to rely on short lead times available from suppliers, including us, in periods of depressed demand. In periods of increased demand, there is a tendency towards longer lead times that has the effect of increasing backlog. As a result, our backlog at a particular date is not necessarily indicative of sales for any future period.

Net Revenues

The following table sets forth, for the periods indicated, a breakdown of the net revenues by product segment and market (in thousands).

	<b>Years Ended December 31,</b>		<b>Change</b>	
	<b>2017</b>	<b>2016</b>	<b>\$</b>	<b>%</b>
<b><i>Net revenues:</i></b>				
Thermal	\$42,233	\$24,033	\$18,200	76 %
EMS	24,568	16,194	8,374	52 %
	\$66,801	\$40,227	\$26,574	66 %
Semiconductor market	\$37,763	\$28,045	\$9,718	35 %
Non-semiconductor market	29,038	12,182	16,856	138%
	\$66,801	\$40,227	\$26,574	66 %

Total consolidated net revenues for the year ended December 31, 2017 were \$66.8 million compared to \$40.2 million for the same period in 2016. During the year ended December 31, 2017, we recorded \$13.6 million in net revenues attributable to Ambrell, of which \$13.2 million were attributable to the industrial market, which is a non-semiconductor market. When adjusted to eliminate the impact of the net revenues attributable to Ambrell, our net revenues for the year ended December 31, 2017, would have been \$53.2 million and would have increased \$13.0 million or 32% as compared to the same periods in 2016. The increase in net revenues primarily reflects the factors previously mentioned in Orders and Backlog.

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When adjusted to eliminate the net revenues attributable to Ambrell, net revenues from customers in non-semiconductor markets for the year ended December 31, 2017 were \$15.8 million, or 30% of total consolidated net revenues, compared to \$12.2 million, or 30% of total consolidated net revenues for the same period in 2016. The increase in net revenues was primarily from customers in the telecommunications markets. The level of our net revenues in these non-semiconductor markets has varied in the past, and we expect it will vary significantly in the future as we build our presence in these markets and establish new markets for our products.

### Product/Customer Mix

Both of our product segments each have multiple products that we design, manufacture and market to our customers. Due to a number of factors, our products have varying levels of gross margin. The mix of products we sell in any period is ultimately determined by our customers' needs. Therefore, the mix of products sold in any given period can change significantly from the prior period. As a result, our consolidated gross margin can be significantly impacted in any given period by a change in the mix of products sold in that period.

We sell most of our products to semiconductor manufacturers and third-party test and assembly houses (end user sales) and to ATE manufacturers (OEM sales) who ultimately resell our equipment with theirs to both semiconductor manufacturers and third-party test and assembly houses. Our Thermal segment also sells into a variety of other markets, including the automotive, consumer electronics, defense/aerospace, energy, industrial and telecommunications markets. As a result of the acquisition of Ambrell, we now also sell into the consumer products packaging, fiber optics and other markets within the broader industrial market. The mix of customers during any given period will affect our gross margin due to differing sales discounts and commissions. For the years ended December 31, 2017 and 2016, our OEM sales as a percentage of net revenues were 9% and 6%, respectively.

OEM sales generally have a lower gross margin than end user sales, as OEM sales historically have had a more significant discount. Our current net operating margins on most OEM sales, however, are only slightly less than margins on end user sales because of the payment of third party sales commissions on most end user sales. We have also continued to experience demands from our OEM customers' supply chain managers to reduce our sales prices to them. If we cannot further reduce our manufacturing and operating costs, these pricing pressures will negatively affect our gross and operating margins.

### Results of Operations

The results of operations for our two product segments are generally affected by the same factors described in the Overview section above. Separate discussions and analyses for each product segment would be repetitive. The discussion and analysis that follows, therefore, is presented on a consolidated basis and includes discussion of factors unique to each product segment where significant to an understanding of that segment.

#### Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

*Net Revenues.* Net revenues were \$66.8 million for the year ended December 31, 2017 compared to \$40.2 million for the same period in 2016, an increase of \$26.6 million or 66%. For the year ended December 31, 2017, our net revenues included \$13.6 million of net revenues attributable to the aforementioned acquisition of Ambrell on May 24, 2017. When adjusted to eliminate the impact of the acquisition of Ambrell, our net revenues for the year ended December 31, 2017 would have increased \$13.0 million or 32% as compared to the same period in 2016. We believe this increase reflects the factors previously discussed in the Overview.

*Gross Margin.* Gross margin was 52% for the year ended December 31, 2017 compared to 51% for the same period in 2016. Although our fixed operating costs increased \$3.1 million in absolute dollar terms, they were more fully

absorbed by the higher net revenue levels, resulting in the improvement in gross margin in 2017 as compared to 2016. Of the \$3.1 million increase in the absolute dollar value of these costs, \$2.3 million represents the fixed operating costs attributable to Ambrell. The remaining \$764,000 increase in our fixed operating costs primarily reflects higher salary and benefits expense for our Thermal segment as a result of an increased use of temporary labor for operations support due to the increased order and shipment activity. To a lesser extent, both of our segments incurred higher costs for insurance premiums related to our employee benefit plans and an increase in our facility related costs in 2017 as compared to 2016.

*Selling Expense.* Selling expense was \$8.1 million for the year ended December 31, 2017 compared to \$5.6 million for the same period in 2016, an increase of \$2.5 million or 46%. Our expense for 2017 included \$2.1 million of selling costs attributable to Ambrell. The remaining increase of \$458,000 primarily reflects higher levels of commission expense reflecting the higher net revenues, and, to a lesser extent, an increase in salary and benefits expense for our Thermal segment.

*Engineering and Product Development Expense.* Engineering and product development expense was \$4.3 million for the year ended December 31, 2017 compared to \$3.7 million for the same period in 2016, an increase of \$641,000, or 18%. Our expense for 2017 included \$650,000 of engineering costs attributable to Ambrell. When adjusted to eliminate this amount, engineering expense would have decreased \$9,000 for 2017 as compared to same period in 2016. Decreases in spending on legal matters related to our intellectual property and lower salary and benefits expense for our EMS product segment were offset by increased spending on materials used in new product development, primarily for our Thermal segment.

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*General and Administrative Expense.* General and administrative expense was \$11.7 million for the year ended December 31, 2017 compared to \$7.0 million for the same period in 2016, an increase of \$4.7 million, or 67%. Our expense for 2017 included \$935,000 of transaction costs related to the acquisition of Ambrell on May 24, 2017, and \$3.0 million of general and administrative expense attributable to Ambrell. Ambrell's general and administrative expense included \$950,000 of amortization of intangible assets. Our expenses for 2016 included \$510,000 of transaction costs related to an acquisition that did not close. When adjusted to eliminate these items, general and administrative expense would have increased \$1.4 million or 21%, primarily reflecting an increase in accruals for profit-related bonuses, higher levels of professional fees and, to a lesser extent, an increase in travel costs.

*Contingent Consideration Liability.* During the year ended December 31, 2017, we recorded an increase of \$7.0 million in the fair value of our liability for contingent consideration. This liability is a result of the aforementioned acquisition of Ambrell in May 2017 and is discussed further in Notes 3 and 4 to our consolidated financial statements. This increase primarily reflects higher actual adjusted EBITDA for the year ended December 31, 2017 as a result of significantly higher than expected levels of net revenues in the fourth quarter of 2017 and an increase in the projected adjusted EBITDA for the year ended December 31, 2018, also as a result of current forecasts for net revenues in 2018 which exceed the amounts projected as of the acquisition date.

*Income Tax Expense.* For the year ended December 31, 2017, we recorded income tax expense of \$2.9 million compared to \$1.5 million for the same period in 2016. Our effective tax rate was 75% for 2017 compared to 37% for 2016. On a quarterly basis, we record income tax expense or benefit based on the expected annualized effective tax rate for the various taxing jurisdictions in which we operate our businesses. The increase in our effective tax rate for 2017 primarily reflects the aforementioned adjustment to our liability for contingent consideration which is not deductible for tax purposes. In addition, our effective tax rate for 2017 reflects the impact of tax legislation enacted in December 2017 which, among other things, reduces the corporate tax rate to 21% starting in 2018 and creates a territorial tax system with a one-time mandatory transition tax on previously deferred earnings of foreign subsidiaries.

**Liquidity and Capital Resources**

As discussed more fully in the Overview, our business and results of operations are substantially dependent upon the demand for ATE by semiconductor manufacturers and companies that specialize in the testing of ICs. The cyclical and volatile nature of demand for ATE makes estimates of future revenues, results of operations and net cash flows difficult.

Our primary historical source of liquidity and capital resources has been cash flow generated by our operations and we manage our businesses to maximize operating cash flows as our primary source of liquidity. We use cash to fund growth in our operating assets, for new product research and development, for acquisitions and for stock repurchases.

Liquidity

Our cash and cash equivalents and working capital were as follows (in thousands):

	<b>December 31,</b>	
	<b>2017</b>	<b>2016</b>
Cash and cash equivalents	\$13,290	\$28,611
Working capital	\$16,580	\$32,950

As of December 31, 2017, \$2.5 million of our cash and cash equivalents was held by our foreign subsidiaries. We currently expect our cash and cash equivalents and projected future cash flow to be sufficient to support our short term working capital requirements, the post-acquisition integration of Ambrell, the 2017 earnout payable and potential contingent consideration payments for Ambrell and other corporate requirements. However, we may need additional financial resources, which could include debt or equity financings, to consummate a significant acquisition if the consideration in such a transaction would require us to utilize a substantial portion of, or an amount equal to or in excess of, our available cash. We do not currently have any credit facilities under which we can borrow to help fund our working capital or other requirements.



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### Cash Flows

*Operating Activities.* Net cash provided by operations for the year ended December 31, 2017 was \$7.2 million. During 2017, we recorded net earnings of \$975,000 which included non-cash charges of \$7.0 million for an increase in the fair value of our contingent consideration liability related to the acquisition of Ambrell, \$1.8 million for depreciation and amortization, \$344,000 for amortization of deferred compensation expense related to stock-based awards, and \$251,000 as a provision for excess and obsolete inventory. We also recorded a deferred income tax benefit of \$1.6 million during 2017 primarily as a result of tax legislation enacted in December 2017. Approximately \$950,000 of our amortization expense was related to the intangible assets acquired as part of the acquisition of Ambrell in May 2017, which is discussed further in the Overview and Note 3 to our consolidated financial statements. When adjusted to eliminate the assets and liabilities purchased in the acquisition of Ambrell, accounts receivable increased \$3.0 million during 2017, reflecting the increased business activity, while accounts payable decreased \$756,000, primarily reflecting the timing of payments to vendors. During 2017, accrued wages and benefits increased \$512,000 as a result of higher levels of accruals for profit-related bonuses and domestic and foreign income taxes payable increased \$586,000 as a result of higher levels of taxable income during 2017.

*Investing Activities.* During 2017, we completed the acquisition of Ambrell for \$22.0 million, net of cash acquired, as discussed in further detail in the Overview and Note 3 to our consolidated financial statements. During 2017, purchases of property and equipment were \$745,000. We currently plan to spend approximately \$2.1 million on leasehold improvements for a new facility for Ambrell in Rochester, New York. We expect to spend these funds during the first half of 2018 and expect to take occupancy on May 1, 2018. We have received grants from the State of New York and the City of Rochester for up to \$550,000 in project cost reimbursements and \$350,000 in refundable tax credits. The grants are dependent upon Ambrell maintaining and creating jobs locally during the five years following acceptance of the grants and will be provided to us once the tenant improvements have been completed, minimum full time employment targets are met and appropriate certifications are made. The refundable tax credits also have requirements related to maintaining and creating jobs locally for the period from June 2019 through January 1, 2029. We have no other significant commitments for capital expenditures for 2018; however, depending upon changes in market demand or manufacturing and sales strategies, we may make such purchases or investments as we deem necessary and appropriate.

*Financing Activities.* During 2017, we utilized \$62,000 to repurchase 13,883 shares of our common stock under the 2015 Repurchase Plan.

### New or Recently Adopted Accounting Standards

See Note 2 to the consolidated financial statements for information concerning the implementation and impact of new or recently adopted accounting standards.

### Critical Accounting Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates, including those related to inventories, long-lived assets, goodwill, identifiable intangibles, contingent consideration liabilities and deferred income tax valuation allowances. We base our estimates on historical experience and on appropriate and customary assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Some of these accounting estimates and assumptions are particularly sensitive because of their significance to our consolidated financial statements and because of the possibility that future events

affecting them may differ markedly from what had been assumed when the financial statements were prepared.

Inventory Valuation

Inventories are valued at cost on a first-in, first-out basis, not in excess of market value. On a quarterly basis, we review our inventories and record excess and obsolete inventory charges based upon our established objective excess and obsolete inventory criteria. These criteria identify material that has not been used in a work order during the prior twelve months and the quantity of material on hand that is greater than the average annual usage of that material over the prior three years. In certain cases, additional excess and obsolete inventory charges are recorded based upon current market conditions, anticipated product life cycles, new product introductions and expected future use of the inventory. The excess and obsolete inventory charges we record establish a new cost basis for the related inventories. During 2017 and 2016, we recorded inventory obsolescence charges for excess and obsolete inventory of \$251,000 and \$226,000, respectively.

Goodwill, Intangible and Long-Lived Assets

We account for goodwill and intangible assets in accordance with Accounting Standards Codification ("ASC") 350 (Intangibles- Goodwill and Other). Finite-lived intangible assets are amortized over their estimated useful economic life and are carried at cost less accumulated amortization. Goodwill is assessed for impairment at least annually in the fourth quarter, on a reporting unit basis, or more frequently when events and circumstances occur indicating that the recorded goodwill may be impaired. As a part of the goodwill impairment assessment, we have the option to 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 amount. If we determine this is the case, we are required to perform a two-step goodwill impairment test to identify potential goodwill impairment and measure the amount of goodwill impairment loss to be recognized. The two-step test is discussed below. If we determine that it is more-likely-than-not that the fair value of the reporting unit is greater than its carrying amounts, the two-step goodwill impairment test is not required.

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If we determine it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount as a result of our qualitative assessment, we will perform a quantitative two-step goodwill impairment test. In the Step I test, the fair value of a reporting unit is computed and compared with its book value. If the book value of a reporting unit exceeds its fair value, a Step II test is performed in which the implied fair value of goodwill is compared with the carrying amount of goodwill. If the carrying amount of goodwill exceeds the implied fair value, an impairment loss is recorded in an amount equal to that excess. The two-step goodwill impairment assessment is based upon a combination of the income approach, which estimates the fair value of our reporting units based upon a discounted cash flow approach, and the market approach which estimates the fair value of our reporting units based upon comparable market multiples. This fair value is then reconciled to our market capitalization at year end with an appropriate control premium. The determination of the fair value of our reporting units requires management to make significant estimates and assumptions including the selection of appropriate peer group companies, control premiums, discount rate, terminal growth rates, forecasts of revenue and expense growth rates, income tax rates, changes in working capital, depreciation, amortization and capital expenditures. Changes in assumptions concerning future financial results or other underlying assumptions could have a significant impact on either the fair value of the reporting unit or the amount of the goodwill impairment charge. As of December 31, 2017 and 2016, goodwill was \$13.7 million and \$1.7 million, respectively. We did not record any impairment charges related to our goodwill during 2017 or 2016.

Indefinite-lived intangible assets are assessed for impairment at least annually in the fourth quarter, or more frequently if events or changes in circumstances indicate that the asset might be impaired. As a part of the impairment assessment, we have the option to perform a qualitative assessment to determine whether it is more likely than not that an indefinite-lived intangible asset is impaired. If, as a result of our qualitative assessment, we determine that it is more-likely-than-not that the fair value of the indefinite-lived intangible asset is less than its carrying amount, the quantitative impairment test is required. Otherwise, no further testing is required. The quantitative impairment test consists of a comparison of the fair value of the intangible asset with its carrying amount. If the carrying amount of the intangible asset exceeds its fair value, an impairment loss is recognized in an amount equal to that excess. As of December 31, 2017 and 2016, our indefinite-lived intangible assets were trademarks carried at \$6.7 million and \$510,000, respectively. We did not record any impairment charges related to our indefinite-lived intangible assets during 2017 or 2016.

Long-lived assets, which consist of finite-lived intangible assets and property and equipment, are assessed for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable or that the useful lives of these assets are no longer appropriate. Each impairment test is based on a comparison of the estimated undiscounted cash flows to the recorded value of the asset. If impairment is indicated, the asset is written down to its estimated fair value. The cash flow estimates used to determine the impairment, if any, contain management's best estimates using appropriate assumptions and projections at that time. At December 31, 2017 and 2016, finite-lived intangibles and long-lived assets were \$10.8 million and \$1.3 million, respectively. We did not record any impairment charges related to our long-lived assets during 2017 or 2016.

## Contingent Consideration Liability

The contingent consideration liability on our balance sheet is accounted for in accordance with the guidance in ASC 820 (Fair Value Measurement). ASC 820 establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and our own assumptions (unobservable inputs). Our contingent consideration liability is measured at fair value on a recurring basis using Level 3 inputs which are inputs that are unobservable and significant to the overall fair value measurement. These unobservable inputs reflect our assumptions about the inputs that market participants would use in pricing the asset or liability, and are developed based on the best information available in the circumstances.

Our contingent consideration liability is a result of our acquisition of Ambrell on May 24, 2017, and it represents the estimated fair value of the additional cash consideration payable that is contingent upon the achievement of certain financial results by Ambrell in 2018, as discussed more fully in Note 3. The fair value of this Level 3 instrument involves generating various scenarios for projected adjusted EBITDA over a specified time period, calculating the associated contingent consideration payments and discounting the average payments to present value. During the second half of 2017, we recorded a \$7.0 million increase in the fair value of our contingent consideration liability. These increases primarily reflect higher actual adjusted EBITDA for the year ended December 31, 2017 as a result of significantly higher than expected levels of net revenues and EBITDA in the fourth quarter of 2017 and an increase in the projected adjusted EBITDA for the year ended December 31, 2018, also as a result of current forecasts for net revenues in 2018 which exceed the amounts projected as of the acquisition date. As of December 31, 2017, the contingent consideration liability on our balance sheet for the 2018 earnout was \$5.7 million.

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Income Taxes

Deferred tax assets are analyzed to determine if there will be sufficient taxable income in the future in order to realize such assets. We assess all of the positive and negative evidence concerning the realizability of the deferred tax assets, including our historical results of operations for the recent past and our projections of future results of operations, in which we make subjective determinations of future events. If, after assessing all of the evidence, both positive and negative, a determination is made that the realizability of the deferred tax assets is not more likely than not, we establish a deferred tax valuation allowance for all or a portion of the deferred tax assets depending upon the specific facts. If any of the significant assumptions were changed, materially different results could occur, which could significantly change the amount of the deferred tax valuation allowance established. As of December 31, 2017, we had a net deferred tax liability of \$3.0 million. As of December 31, 2016, we had a net deferred tax asset of \$1.1 million. Our deferred tax valuation allowance at December 31, 2017 and 2016 was \$370,000 and \$0, respectively.

**Off -Balance Sheet Arrangements**

There were no off-balance sheet arrangements during the year ended December 31, 2017 that have or are reasonably likely to have, a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to our interests.

**Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

This disclosure is not required for a smaller reporting company.

**Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

Consolidated financial statements are set forth in this Report beginning at page F-1 and are incorporated by reference into this Item 8.

**Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

None.

## **Item 9A. CONTROLS AND PROCEDURES**

### **Evaluation of Disclosure Controls and Procedures**

We maintain disclosure controls and procedures, as such term is defined in Rule 13a-15(e) under the Exchange Act. Because there are inherent limitations in all control systems, a control system, no matter how well conceived and operated, can provide only reasonable, as opposed to absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Our management, including the Chief Executive Officer (“CEO”) and Chief Financial Officer (“CFO”), does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all error and all fraud. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. Accordingly, our management has designed the disclosure controls and procedures to provide reasonable assurance that the objectives of the control system were met.

**CEO/CFO Conclusions about the Effectiveness of the Disclosure Controls and Procedures.** As required by Rule 13a-15(b), inTEST management, including our CEO and CFO, conducted an evaluation as of the end of the period covered by this Report, of the effectiveness of our disclosure controls and procedures. Based on that evaluation, our CEO and CFO concluded that, as of the end of the period covered by this Report, our disclosure controls and procedures were effective at the reasonable assurance level.

### **Changes in Internal Control Over Financial Reporting**

During the period covered by this Report, there has been no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the period covered by this Report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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**Management's Report on Internal Control over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended, as a process designed by, or under the supervision of, our principal executive and principal financial officers 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 and 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 our assets;

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 our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

3. Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Because of inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2017. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) on Internal Control-Integrated 2013 Framework. Based upon this assessment, management believes that, as of December 31, 2017, our internal control over financial reporting is effective at a reasonable assurance level.

This annual report does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting, as such an attestation is not required pursuant to rules of the SEC applicable to smaller reporting companies.

**Item 9B. OTHER INFORMATION**

None.

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**PART III**

**Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

The information required by this Item is incorporated by reference from our definitive proxy statement for our 2018 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2018, or, if our proxy statement is not filed on or before April 30, 2018, will be filed by that date by an amendment to this Form 10-K.

**Item 11. EXECUTIVE COMPENSATION**

The information required by this Item is incorporated by reference from our definitive proxy statement for our 2018 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2018, or, if our proxy statement is not filed on or before April 30, 2018, will be filed by that date by an amendment to this Form 10-K.

**Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information required by Item 201(d) of Regulation S-K is set forth below. The remainder of the information required by this Item 12 is incorporated by reference from our definitive proxy statement for our 2018 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2018, or, if our proxy statement is not filed on or before April 30, 2018, will be filed by that date by an amendment to this Form 10-K.



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The following table shows the number of securities that may be issued pursuant to our equity compensation plans (including individual compensation arrangements) as of December 31, 2017:

**Equity Compensation Plan Information**

<b>Plan Category</b>	<b>Number of securities to be issued upon exercise of outstanding options, warrants and rights<sup>(1)</sup></b>	<b>Weighted-average exercise price of outstanding options, warrants and rights</b>	<b>Number of securities remaining available for future issuance under equity compensation plans<sup>(2)</sup></b>
Equity compensation plans approved by security holders	76,400	\$ 5.98	345,200
Equity compensation plans not approved by security holders	-	-	-
Total	76,400	\$ 5.98	345,200

<sup>(1)</sup> The securities that may be issued are shares of inTEST common stock, issuable upon exercise of outstanding stock options.

<sup>(2)</sup> The securities that remain available for future issuance are issuable pursuant to the 2014 Stock Plan.

**Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information required by this Item is incorporated by reference from our definitive proxy statement for our 2018 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2018, or, if our proxy statement is not filed on or before April 30, 2018, will be filed by that date by an amendment to this Form 10-K.

**Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES**

The information required by this Item is incorporated by reference from our definitive proxy statement for our 2018 Annual Meeting of Stockholders to be filed with the SEC on or before April 30, 2018, or, if our proxy statement is not filed on or before April 30, 2018, will be filed by that date by an amendment to this Form 10-K.

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**PART IV**

**Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES**

(a) The documents filed as part of this Annual Report on Form 10-K are:

(i) Our consolidated financial statements and notes thereto as well as the applicable report of our independent registered public accounting firm are included in Part II, Item 8 of this Annual Report on Form 10-K.

(ii) The following financial statement schedule should be read in conjunction with the consolidated financial statements set forth in Part II, Item 8 of this Annual Report on Form 10-K:

Schedule II -- Valuation and Qualifying Accounts

(iii) The exhibits required by Item 601 of Regulation S-K are included under Item 15(b) of this Annual Report on Form 10-K.

(b) Exhibits required by Item 601 of Regulation S-K:

A list of the Exhibits which are required by Item 601 of Regulation S-K and filed with this Report is set forth in the Exhibit Index immediately preceding the signature page, which Exhibit Index is incorporated herein by reference.

**Item 16. FORM 10-K SUMMARY**

None.

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**Index to Exhibits**

<b>Exhibit Number</b>	<b><u>Description of Exhibit</u></b>
2.1	<u>Stock Purchase Agreement among Ambrell Holdings, LLC, Ambrell Corporation, Graycliff Private Equity Partners III LP, Hudson River Co-Investment Fund II LP and inTEST Corporation dated as of May 24, 2017 (1)</u>
3.1	<u>Certificate of Incorporation. (2)</u>
3.2	<u>Bylaws as amended on June 23, 2014. (3)</u>
10.1	<u>Lease Agreement between Exeter 804 East Gate, LLC and the Company dated May 10, 2010. (4)</u>
10.2	<u>Lease Agreement between AMB-SGP Seattle/Boston, LLC and Temptronic Corporation (a subsidiary of the Company), dated October 25, 2010. (5)</u>
10.3	<u>Lease Agreement between Columbia California Warm Springs Industrial, LLC and inTEST Silicon Valley Corporation dated January 9, 2012. (6)</u>
10.4	<u>First Amendment to Lease Agreement between Columbia California Warm Springs Industrial, LLC and inTEST Silicon Valley Corporation dated November 18, 2016. (7)</u>
10.5	<u>Guaranty Agreements between Columbia California Warm Springs Industrial, LLC and inTEST Corporation dated January 9, 2012. (6)</u>
10.6	<u>Lease Agreement between Maguire Family Properties, Inc. and Ambrell Corporation dated December 19, 2017 (8)</u>
10.7	<u>Guaranty of Lease between Maguire Family Properties, Inc. and Ambrell Corporation dated December 19, 2017 (8)</u>
10.8	<u>Form of Indemnification Agreement (9)(*)</u>
10.9	<u>inTEST Corporation 2014 Stock Plan (*)</u>
10.10	<u>inTEST Corporation 2007 Stock Plan. (*)</u>
10.11	<u>Form of Restricted Stock Award Agreement. (10)(*)</u>
10.12	<u>Form of Non-Qualified Stock Option Agreement. (10)(*)</u>
10.13	<u>Form of Incentive Stock Option Agreement. (10)(*)</u>
10.14	<u>Change of Control Agreement dated August 27, 2007 between the Company and Robert E. Matthiessen. (11)(*)</u>
10.15	<u>Change of Control Agreement dated August 27, 2007 between the Company and Hugh T. Regan, Jr. (11)(*)</u>
10.16	<u>Change of Control Agreement dated May 5, 2008 between the Company and James Pelrin. (12)(*)</u>
10.17	<u>Amendment to Change of Control Agreement dated December 31, 2008 between the Company and Robert E. Matthiessen. (13)(*)</u>
10.18	<u>Amendment to Change of Control Agreement dated December 31, 2008 between the Company and Hugh T. Regan, Jr. (13)(*)</u>
10.19	<u>Amendment to Change of Control Agreement dated December 31, 2008 between the Company and James Pelrin. (13)(*)</u>
10.20	<u>Compensatory Arrangements of Executive Officers and Directors. (*) (14)</u>
14	<u>Code of Ethics. (15)</u>
21	<u>Subsidiaries of the Company.</u>
23	<u>Consent of RSM US LLP.</u>

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- 31.1 [Certification of Chief Executive Officer pursuant to Rule 13a-14\(a\).](#)
- 31.2 [Certification of Chief Financial Officer pursuant to Rule 13a-14\(a\).](#)
- 32.1 [Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 32.2 [Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 101.INS XBRL Taxonomy Instance Document
- 101.SCH XBRL Taxonomy Extension Schema Document
- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF XBRL Taxonomy Extension Definition Linkbase Document
- 101.LAB XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

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**Index to Exhibits**

(Continued)

- (1) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated May 24, 2017, File No. 001-36117, filed May 24, 2017, and incorporated herein by reference.
- (2) Previously filed by the Company as an exhibit to the Company's Registration Statement on Form S-1, File No. 333-26457 filed May 2, 1997, and incorporated herein by reference.
- (3) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated June 23, 2014, File No. 001-36117, filed June 25, 2014, and incorporated herein by reference.
- (4) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated May 10, 2010, File No. 000-22529, filed May 13, 2010, and incorporated herein by reference.
- (5) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated October 27, 2010, File No. 000-22529, filed October 29, 2010, and incorporated herein by reference.
- (6) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended March 31, 2012, File No. 000-22529, filed May 15, 2012, and incorporated herein by reference.
- (7) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated November 18, 2016, File No. 001-36117, filed November 22, 2016, and incorporated herein by reference.
- (8) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated December 19, 2017, File No. 001-36117, filed December 22, 2017, and incorporated herein by reference.
- (9) Previously filed by the Company as an exhibit to the Company's Current Report on Form 8-K dated October 2, 2017, File No. 001-36117, filed October 6, 2017, and incorporated herein by reference.
- (10) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended March 31, 2016, File No. 001-36117, filed May 13, 2016, and incorporated herein by reference.
- (11) Previously filed by the Company as an exhibit to the Company's Form 10-K for the year ended December 31, 2007, File No. 000-22529, filed March 31, 2008, and incorporated herein by reference.
- (12) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended June 30, 2008, File No. 000-22529, filed August 14, 2008, and incorporated herein by reference.
- (13) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended June 30, 2009, File No. 000-22529, filed August 14, 2009, and incorporated herein by reference.
- (14) Portions of this exhibit were previously filed on the Company's Current Report on Form 8-K dated March 12, 2018, File No. 001-36117, filed March 15, 2018, and incorporated herein by reference.
- (15) Previously filed by the Company as an exhibit to the Company's Form 10-Q for the quarter ended June 30, 2016, File No. 001-36117, filed August 12, 2016, and incorporated herein by reference.
- (\*) Indicates a management contract or compensatory plan, contract or arrangement in which a director or executive officers participate.

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**Signatures**

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

inTEST Corporation

By: /s/ James Pelrin March 28, 2018  
James Pelrin  
President and Chief Executive Officer

Pursuant to the requirements of 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.

/s/ James Pelrin  
James Pelrin, President,  
Chief Executive Officer and Director March 28, 2018  
(Principal Executive Officer)

/s/ Hugh T. Regan, Jr.  
Hugh T. Regan, Jr., Treasurer, Chief  
Financial Officer and Secretary March 28, 2018  
(Principal Financial Officer)

/s/ Robert E. Matthiessen March 28, 2018  
Robert E. Matthiessen, Chairman

/s/ Steven J. Abrams  
Steven J. Abrams, Esq., Director

March 28, 2018

/s/ Joseph W. Dews IV  
Joseph W. Dews IV, Director

March 28, 2018

/s/ William Kraut  
William Kraut, Director

March 28, 2018

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**inTEST CORPORATION**

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FINANCIAL STATEMENT SCHEDULE**

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<u>Consolidated Statements of Operations for the years ended December 31, 2017 and 2016</u>	F - 3
<u>Consolidated Statements of Comprehensive Earnings for the years ended December 31, 2017 and 2016</u>	F - 4
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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Stockholders and the Board of Directors of inTEST Corporation

**Opinion on the Financial Statements**

We have audited the accompanying consolidated balance sheets of inTEST Corporation and subsidiaries (the Company) as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive earnings, stockholders' equity and cash flows for the years then ended, and the related notes to the consolidated financial statements and schedule (collectively, 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, 2017 and 2016, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

**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 Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with 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. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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 regarding 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/ RSM US LLP

We have served as the Company's auditor since 2008.

Blue Bell, Pennsylvania  
March 28, 2018

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**inTEST CORPORATION**  
**CONSOLIDATED BALANCE SHEETS**  
(In thousands, except share and per share data)

	<b>December 31,</b>	
	<b>2017</b>	<b>2016</b>
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$13,290	\$28,611
Trade accounts receivable, net of allowance for doubtful accounts of \$213 and \$146, respectively	12,166	5,377
Inventories	4,966	3,676
Prepaid expenses and other current assets	577	342
Total current assets	30,999	38,006
Property and equipment:		
Machinery and equipment	5,033	4,383
Leasehold improvements	822	603
Gross property and equipment	5,855	4,986
Less: accumulated depreciation	(4,314 )	(4,042 )
Net property and equipment	1,541	944
Deferred tax assets	-	1,110
Goodwill	13,738	1,706
Intangible assets, net	16,014	875
Restricted certificates of deposit	175	175
Other assets	26	28
Total assets	\$62,493	\$42,844
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$2,032	\$1,368
Accrued wages and benefits	2,781	1,588
Accrued rent	521	572
Accrued professional fees	717	419
Accrued sales commissions	529	287
Customer deposits and deferred revenue	886	74
Domestic and foreign income taxes payable	1,199	575
Earnout payable	5,355	-
Other current liabilities	399	173
Total current liabilities	14,419	5,056
Federal transition tax payable, net of current portion	436	-
Deferred tax liabilities	2,606	-
Contingent consideration liability, net of current portion	5,744	-
Total liabilities	23,205	5,056

Commitments and Contingencies (Notes 10 and 12)

Stockholders' equity:

Preferred stock, \$0.01 par value; 5,000,000 shares authorized; no shares issued or outstanding	-	-
Common stock, \$0.01 par value; 20,000,000 shares authorized; 10,427,435 and 10,394,018 shares issued, respectively	104	104
Additional paid-in capital	25,860	25,578
Retained earnings	12,646	11,671
Accumulated other comprehensive earnings	882	639
Treasury stock, at cost; 33,077 and 33,077 shares, respectively	(204 )	(204 )
Total stockholders' equity	39,288	37,788
Total liabilities and stockholders' equity	\$62,493	\$42,844

See accompanying Notes to Consolidated Financial Statements.

Table of Contents**inTEST CORPORATION**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

(In thousands, except share and per share data)

	<b>Years ended December</b>	
	<b>31,</b>	
	<b>2017</b>	<b>2016</b>
Net revenues	\$66,801	\$40,227
Cost of revenues	32,111	19,849
Gross margin	34,690	20,378
Operating expenses:		
Selling expense	8,108	5,567
Engineering and product development expense	4,301	3,660
General and administrative expense	11,694	7,005
Adjustment to contingent consideration liability	6,976	-
Total operating expenses	31,079	16,232
Operating income	3,611	4,146
Other income	227	61
Earnings before income tax expense	3,838	4,207
Income tax expense	2,863	1,549
Net earnings	\$975	\$2,658
Net earnings per common share - basic	\$0.09	\$0.26
Weighted average common shares outstanding - basic	10,284,572	10,313,747
Net earnings per common share - diluted	\$0.09	\$0.26
Weighted average common shares and common share equivalents outstanding - diluted	10,339,313	10,332,920

See accompanying Notes to Consolidated Financial Statements.

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**inTEST CORPORATION**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE EARNINGS**  
(In thousands)

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2017</b>	<b>2016</b>
Net earnings	\$975	\$2,658
Foreign currency translation adjustments	243	(86 )
Comprehensive earnings	\$1,218	\$2,572

See accompanying Notes to Consolidated Financial Statements

Table of Contents**inTEST CORPORATION****CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**

(In thousands, except share data)

	<b>Common Stock Shares</b>	<b>Common Stock Amount</b>	<b>Additional Paid-In Capital</b>	<b>Retained Earnings</b>	<b>Accumulated Other Comprehensive Earnings</b>	<b>Treasury Stock</b>	<b>Total Stockholders' Equity</b>
Balance, January 1, 2016	10,549,423	\$ 105	\$ 26,286	\$ 9,013	\$ 725	\$ (204 )	\$ 35,925
Net earnings	-	-	-	2,658	-	-	2,658
Other comprehensive loss	-	-	-	-	(86 )	-	(86 )
Amortization of deferred compensation related to stock-based awards	-	-	269	-	-	-	269
Issuance of unvested shares of restricted stock	86,400	1	(1 )	-	-	-	-
Repurchase and retirement of common stock	(241,805 )	(2 )	(976 )	-	-	-	(978 )
Balance, December 31, 2016	10,394,018	104	25,578	11,671	639	(204 )	37,788
Net earnings	-	-	-	975	-	-	975
Other comprehensive loss	-	-	-	-	243	-	243
Amortization of deferred compensation related to stock-based awards	-	-	344	-	-	-	344
Issuance of unvested shares of restricted stock	66,000	-	-	-	-	-	-
Forfeiture of unvested shares of restricted stock	(18,700 )	-	-	-	-	-	-
Repurchase and retirement of common stock	(13,883 )	-	(62 )	-	-	-	(62 )
Balance, December 31, 2017	10,427,435	\$ 104	\$ 25,860	\$ 12,646	\$ 882	\$ (204 )	\$ 39,288

See accompanying Notes to Consolidated Financial Statements





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**inTEST CORPORATION**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(In thousands)

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2017</b>	<b>2016</b>
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Net earnings	\$975	\$2,658
Adjustments to reconcile net earnings to net cash provided by operating activities:		
Depreciation and amortization	1,779	599
Adjustment to earnout payable	5,355	-
Adjustment to contingent consideration liability	1,621	-
Provision for excess and obsolete inventory	251	226
Foreign exchange (gain) loss	(146 )	16
Amortization of deferred compensation related to stock-based awards	344	269
Proceeds from sale of demonstration equipment, net of gain	152	129
Deferred income tax (benefit) expense	(1,630 )	135
Changes in assets and liabilities:		
Trade accounts receivable	(2,983 )	(1,009 )
Inventories	388	(384 )
Prepaid expenses and other current assets	(31 )	295
Restricted certificates of deposit	-	175
Other assets	2	178
Accounts payable	(756 )	459
Accrued wages and benefits	512	126
Accrued rent	(51 )	(85 )
Accrued professional fees	210	57
Accrued sales commissions	137	(10 )
Customer deposits and deferred revenue	55	(118 )
Domestic and foreign income taxes payable	586	549
Other current liabilities	36	23
Federal transition tax payable	436	-
Net cash provided by operating activities	7,242	4,288
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Acquisition of business, net of cash acquired	(21,962)	-
Purchase of property and equipment	(745 )	(339 )
Proceeds from sale of property and equipment	36	-
Net cash used in investing activities	(22,671)	(339 )
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
Repurchases of common stock	(62 )	(978 )
Net cash used in financing activities	(62 )	(978 )

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Effects of exchange rates on cash	170	(70 )
Net cash provided by (used in) all activities	(15,321)	2,901
Cash and cash equivalents at beginning of period	28,611	25,710
Cash and cash equivalents at end of period	\$13,290	\$28,611
Cash payments for:		
Domestic and foreign income taxes	\$3,467	\$635
Details of acquisition:		
Fair value of assets acquired, net of cash	\$22,652	
Liabilities assumed	(8,599 )	
Goodwill resulting from acquisition	12,032	
Contingent consideration	(4,123 )	
Net cash paid for acquisition	\$21,962	
SUPPLEMENTAL DISCLOSURE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:		
Issuance of unvested shares of restricted stock	\$432	\$369
Forfeiture of unvested shares of restricted stock	(104 )	-

See accompanying Notes to Consolidated Financial Statements.

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**inTEST CORPORATION**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

(In thousands, except share and per share data)

**(1) NATURE OF OPERATIONS**

We are an independent designer, manufacturer and marketer of thermal management products and semiconductor automated test equipment (“ATE”) interface solutions. Our products are used by semiconductor manufacturers to perform development, qualifying and final testing of integrated circuits (“ICs”) and wafers, and for other electronic testing across a range of industries including the automotive, defense/aerospace, energy, industrial and telecommunications markets. We also offer induction heating products for joining and forming metals in a variety of industrial markets, including automotive, aerospace, machinery, wire & fasteners, medical, semiconductor, food & beverage, and packaging. We manufacture our products in the U.S. Marketing and support activities are conducted worldwide from our facilities in the U.S., Germany, Singapore, the Netherlands and the U.K. The consolidated entity is comprised of inTEST Corporation and our wholly-owned subsidiaries.

During 2016, we reorganized our business from *three* product segments, Thermal Products, Mechanical Products and Electrical Products, into *two* product segments, Thermal Products (“Thermal”) and Electromechanical Semiconductor Products (“EMS”). Accordingly, effective *January 1, 2017*, we have *two* reportable segments, which are also our reporting units. Prior period information has been reclassified to be comparable to the presentation for 2017.

On *May 24, 2017*, we completed the acquisition of Ambrell Corporation (“Ambrell”). The acquisition was completed by acquiring all of the outstanding capital stock of Ambrell. Ambrell is a manufacturer of precision induction heating systems which are used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. The Ambrell acquisition complements our current thermal technologies and broadens our diverse customer base, allowing expansion within many non-semiconductor related markets, such as consumer product packaging, fiber-optics, automotive and other markets. Ambrell's operations are included in our Thermal segment. Ambrell manufactures its products in the U.S. and conducts marketing and support activities from its facilities in the U.S., the Netherlands and the U.K. This acquisition is discussed further in Note 3.

The ATE market in which we operate is characterized by rapid technological change, competitive pricing pressures and cyclical as well as seasonal market patterns. This market is subject to significant economic downturns at various times. Our financial results are affected by a wide variety of factors, including, but *not* limited to, general economic conditions worldwide and in the markets in which we operate, economic conditions specific to the ATE market and the other markets we serve, our ability to safeguard patented technology and intellectual property in a rapidly evolving market, downward pricing pressures from customers, and our reliance on a relatively few number of customers for a significant portion of our sales. In addition, we are exposed to the risk of obsolescence of our inventory depending on the mix of future business and technological changes within the markets that we serve. We also continue to implement an acquisition strategy that *may* cause us to incur substantial expense in reviewing and evaluating potential transactions. We *may* or *may not* be successful in locating suitable businesses to acquire. In addition, we *may not* be able to successfully integrate any business we do acquire with our existing business and we *may not* be able to operate the acquired business profitably. As a result of these or other factors, we *may* experience significant period-to-period fluctuations in future operating results.

## (2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

### **Basis of Presentation and Use of Estimates**

The accompanying consolidated financial statements include our accounts and those of our wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated upon consolidation. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires us 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 reporting period. Actual results could differ from those estimates. Certain of our accounts, including inventories, long-lived assets, goodwill, identifiable intangibles, contingent consideration and deferred tax assets and liabilities including related valuation allowances, are particularly impacted by estimates.

### **Reclassification**

Certain prior year amounts have been reclassified to be comparable with the current year's presentation.

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### **Cash and Cash Equivalents**

Short-term investments that have maturities of *three* months or less when purchased are considered to be cash equivalents and are carried at cost, which approximates market value. Our cash balances, which are deposited with highly reputable financial institutions, at times *may* exceed the federally insured limits. We have *not* experienced any losses related to these cash balances and believe the credit risk to be minimal.

### **Trade Accounts Receivable and Allowance for Doubtful Accounts**

Trade accounts receivable are recorded at the invoiced amount and do *not* bear interest. We grant credit to customers and generally require *no* collateral. To minimize our risk, we perform ongoing credit evaluations of our customers' financial condition. The allowance for doubtful accounts is our best estimate of the amount of probable credit losses in our existing accounts receivable. We determine the allowance based on historical write-off experience and the aging of such receivables, among other factors. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote. We do *not* have any off-balance sheet credit exposure related to our customers. We recorded bad debt expense of \$68 for the year ended *December 31, 2017*. There was *no* bad debt expense recorded for the year ended *December 31, 2016*. Cash flows from accounts receivable are recorded in operating cash flows.

### **Fair Value of Financial Instruments**

Our financial instruments include accounts receivable, accounts payable and our liability for contingent consideration. Our accounts receivable and accounts payable are carried at cost which approximates fair value, due to the short maturities of the accounts. Our liability for contingent consideration is accounted for in accordance with the guidance in Accounting Standards Codification ("ASC") 820 (Fair Value Measurement). ASC 820 establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and our own assumptions (unobservable inputs). Our contingent consideration liability is measured at fair value on a recurring basis using Level 3 inputs which are inputs that are unobservable and significant to the overall fair value measurement. These unobservable inputs reflect our assumptions about the inputs that market participants would use in pricing the asset or liability, and are developed based on the best information available in the circumstances. See Note 4 for further disclosures related to the fair value of our liability for contingent consideration.

### **Inventories**

Inventories are valued at cost on a *first-in, first-out* basis, *not* in excess of market value. Cash flows from the sale of inventories are recorded in operating cash flows. On a quarterly basis, we review our inventories and record excess and obsolete inventory charges based upon our established objective excess and obsolete inventory criteria. These criteria identify material that has *not* been used in a work order during the prior *twelve* months and the quantity of material on hand that is greater than the average annual usage of that material over the prior *three* years. In certain cases, additional excess and obsolete inventory charges are recorded based upon current market conditions, anticipated product life cycles, new product introductions and expected future use of the inventory. The excess and obsolete inventory charges we record establish a new cost basis for the related inventories. We incurred excess and obsolete inventory charges of \$251 and \$226 for the years ended *December 31, 2017* and *2016*, respectively.

### **Property and Equipment**

Machinery and equipment are stated at cost, except for machinery and equipment acquired in a business combination, which are stated at fair value at the time of acquisition. As further discussed below under "Goodwill, Intangible and Long-Lived Assets," machinery and equipment that has been determined to be impaired is written down to its fair

value at the time of the impairment. Depreciation is based upon the estimated useful life of the assets using the straight-line method. The estimated useful lives range from *one* to *ten* years. Leasehold improvements are recorded at cost and amortized over the shorter of the lease term or the estimated useful life of the asset. Total depreciation expense was \$618 and \$370 for the years ended *December 31, 2017* and *2016*, respectively.

**Goodwill, Intangible and Long-Lived Assets**

We account for goodwill and intangible assets in accordance with ASC 350 (Intangibles - Goodwill and Other). Finite-lived intangible assets are amortized over their estimated useful economic life and are carried at cost less accumulated amortization. Goodwill is assessed for impairment annually in the *fourth* quarter on a reporting unit basis, or more frequently when events and circumstances occur indicating that the recorded goodwill *may* be impaired. As a part of the goodwill impairment assessment, we have the option to 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 amount. If we determine this is the case, we are required to perform a *two*-step goodwill impairment test to identify potential goodwill impairment and measure the amount of goodwill impairment loss to be recognized. The *two*-step test is discussed below. If we determine that it is more-likely-than-*not* that the fair value of the reporting unit is greater than its carrying amounts, the *two*-step goodwill impairment test is *not* required.

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If we determine it is more-likely-than-*not* that the fair value of a reporting unit is less than its carrying amount as a result of our qualitative assessment, we will perform a quantitative *two*-step goodwill impairment test. In the Step I test, the fair value of a reporting unit is computed and compared with its book value. If the book value of a reporting unit exceeds its fair value, a Step II test is performed in which the implied fair value of goodwill is compared with the carrying amount of goodwill. If the carrying amount of goodwill exceeds the implied fair value, an impairment loss is recorded in an amount equal to that excess. The *two*-step goodwill impairment assessment is based upon a combination of the income approach, which estimates the fair value of our reporting units based upon a discounted cash flow approach, and the market approach which estimates the fair value of our reporting units based upon comparable market multiples. This fair value is then reconciled to our market capitalization at year end with an appropriate control premium. The determination of the fair value of our reporting units requires management to make significant estimates and assumptions including the selection of appropriate peer group companies, control premiums, discount rate, terminal growth rates, forecasts of revenue and expense growth rates, income tax rates, changes in working capital, depreciation, amortization and capital expenditures. Changes in assumptions concerning future financial results or other underlying assumptions could have a significant impact on either the fair value of the reporting unit or the amount of the goodwill impairment charge.

Indefinite-lived intangible assets are assessed for impairment annually in the *fourth* quarter, or more frequently if events or changes in circumstances indicate that the asset might be impaired. As a part of the impairment assessment, we have the option to perform a qualitative assessment to determine whether it is more likely than *not* that an indefinite-lived intangible asset is impaired. If, as a result of our qualitative assessment, we determine that it is more-likely-than-*not* that the fair value of the indefinite-lived intangible asset is less than its carrying amount, the quantitative impairment test is required. Otherwise, *no* further testing is required. The quantitative impairment test consists of a comparison of the fair value of the intangible asset with its carrying amount. If the carrying amount of the intangible asset exceeds its fair value, an impairment loss is recognized in an amount equal to that excess.

Long-lived assets, which consist of finite-lived intangible assets and property and equipment, are assessed for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets *may not* be fully recoverable or that the useful lives of these assets are *no* longer appropriate. Each impairment test is based on a comparison of the estimated undiscounted cash flows to the recorded value of the asset. If impairment is indicated, the asset is written down to its estimated fair value. The cash flow estimates used to determine the impairment, if any, contain management's best estimates using appropriate assumptions and projections at that time.

## Stock-Based Compensation

We account for stock-based compensation in accordance with ASC Topic 718 (Compensation - Stock Compensation) which requires that employee share-based equity awards be accounted for under the fair value method and requires the use of an option pricing model for estimating fair value, which is then amortized to expense over the service periods. See further disclosures related to our stock-based compensation plans in Note 13.

## Subsequent Events

We have made an assessment of our operations and determined that there were *no* material subsequent events requiring adjustment to, or disclosure in, our consolidated financial statements for the year ended *December 31, 2017*.

## Revenue Recognition

We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable, and collection of the related receivable is reasonably assured. Sales of our products are made through our sales employees, *third*-party sales representatives and distributors. There are *no*

differences in revenue recognition policies based on the sales channel. We do *not* provide our customers with rights of return or exchanges. Revenue is generally recognized upon product shipment. Our customers' purchase orders do *not* typically contain any customer-specific acceptance criteria, other than that the product performs within the agreed upon specifications. We test all products manufactured as part of our quality assurance process to determine that they comply with specifications prior to shipment to a customer. To the extent that any customer purchase order contains customer-specific acceptance criteria, revenue recognition is deferred until customer acceptance.

In addition, in our Thermal segment, we lease certain of our equipment to customers under non-cancellable operating leases. These leases generally have an initial term of *six* months. We recognize revenue for these leases on a straight-line basis over the term of the lease.



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With respect to sales tax collected from customers and remitted to governmental authorities, we use a net presentation in our consolidated statement of operations. As a result, there are *no* amounts included in either our net revenues or cost of revenues related to sales tax.

## Product Warranties

We generally provide product warranties and record estimated warranty expense at the time of sale based upon historical claims experience. Warranty expense is included in selling expense in the consolidated financial statements.

## Engineering and Product Development

Engineering and product development costs, which consist primarily of the salary and related benefits costs of our technical staff, as well as the cost of materials used in product development, are expensed as incurred.

## Foreign Currency

For our foreign subsidiaries whose functional currencies are *not* the U.S. dollar, assets and liabilities are translated using the exchange rate in effect at the balance sheet date. The results of operations are translated using an average exchange rate for the period. The effects of rate fluctuations in translating assets and liabilities of these international operations into U.S. dollars are included in accumulated other comprehensive earnings in stockholders' equity. Transaction gains or losses are included in net earnings. For the years ended *December 31, 2017* and *2016*, foreign currency transaction gains (losses) were *\$146* and *\$(16)*, respectively.

## Income Taxes

The asset and liability method is used in accounting for income taxes. Under this method, deferred tax assets and liabilities are recognized for operating loss and tax credit carryforwards and for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. 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 the results of operations in the period that includes the enactment date. A valuation allowance is recorded to reduce the carrying amounts of deferred tax assets if it is more likely than *not* that such assets will *not* be realized.

On *December 22, 2017*, the President of the United States signed into law the Tax Cuts and Jobs Act (the "Tax Act"). This legislation makes significant changes in the U.S. tax laws including reducing the corporate tax rate to *21%* starting in *2018* and creating a territorial tax system with a *one-time* mandatory transition tax payable on previously unremitted earnings of foreign subsidiaries, among other things.

In *December 2017*, the Securities and Exchange Commission staff issued Staff Accounting Bulletin *No. 118* ("SAB 118"), which provides guidance on accounting for enactment effects of the Tax Act. SAB 118 provides a measurement period of up to *one* year from the Tax Act's enactment date for companies to complete their accounting. In accordance with SAB 118, to the extent that a company's accounting for certain income tax effects of the Tax Act is incomplete, but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate to be included in its financial statements, it should continue to account for the provisions of the tax laws that were in effect immediately before enactment of the Tax Act. As of *December 31, 2017*, we have reported provisional amounts for the income tax effects of the Tax Act to the extent a reasonable estimate could be made, and will continue to refine our estimates throughout the measurement period or until the accounting is complete. See Note 11 for additional information regarding income taxes.

**Net Earnings Per Common Share**

Net earnings per common share - basic is computed by dividing net earnings by the weighted average number of common shares outstanding during each period. Net earnings per common share - diluted is computed by dividing net earnings by the weighted average number of common shares and common share equivalents outstanding during each period. Common share equivalents represent unvested shares of restricted stock and stock options and are calculated using the treasury stock method. Common share equivalents are excluded from the calculation if their effect is anti-dilutive.

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The table below sets forth, for the periods indicated, a reconciliation of weighted average common shares outstanding - basic to weighted average common shares and common share equivalents outstanding - diluted and the average number of potentially dilutive securities that were excluded from the calculation of diluted earnings per share because their effect was anti-dilutive:

	<b>Years Ended December</b>	
	<b>31,</b>	
	<b>2017</b>	<b>2016</b>
Weighted average common shares outstanding - basic	10,284,572	10,313,747
Potentially dilutive securities:		
Unvested shares of restricted stock and employee stock options	54,741	19,173
Weighted average common shares outstanding - diluted	10,339,313	10,332,920
Average number of potentially dilutive securities excluded from calculation	77,047	18,658

**Effect of Recently Adopted Amendments to Authoritative Accounting Guidance**

In *March 2016*, the Financial Accounting Standards Board (the "FASB") issued amendments to the current guidance on accounting for stock-based compensation issued to employees which is contained in ASC Topic 718 (Compensation - Stock Compensation). The amendments simplify 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. The amendments were effective for us as of *January 1, 2017*. The implementation of these amendments did *not* have a material impact on our consolidated financial statements.

In *July 2015*, the FASB issued amendments to update the current guidance on the subsequent measurement of inventory, which is presented in ASC Topic 330 (Inventory). The purpose of the amendments is to simplify the subsequent measurement of inventory and reduce the number of potential outcomes. It applies to all inventory other than inventory measured using last-in, *first*-out or the retail inventory method. Current guidance requires an entity to measure inventory at the lower of cost or market. Market could be replacement cost, net realizable value, or net realizable value less a normal profit margin. The updated guidance amends this to require that an entity measure inventory within the scope of the updated guidance at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. The amendments were effective for us as of *January 1, 2017*. The implementation of these amendments did *not* have a material impact on our consolidated financial statements.

**Effect of Recently Issued Amendments to Authoritative Accounting Guidance**

In *May 2017*, the FASB issued amendments to the guidance on accounting for a change to the terms or conditions (modification) of a share-based payment award. The amendments provide that an entity should account for the effects of a modification unless the fair value and vesting conditions of the modified award and the classification of the modified award (equity or liability instrument) are the same as the original award immediately before the modification. The amendments are effective for us as of *January 1, 2018*. Early adoption is permitted. The amendments are to be applied prospectively to an award modified on or after the adoption date. We do *not* expect the implementation of these amendments to have a material impact on our consolidated financial statements.

In *January 2017*, the FASB issued amendments to the guidance on accounting for goodwill impairment. The amendments simplify the accounting for goodwill impairment by removing Step II of the goodwill impairment test, which requires a hypothetical purchase price allocation. Under the amendments, a goodwill impairment will now be the amount by which a reporting unit's carrying value exceeds its fair value, *not* to exceed the carrying amount of goodwill. The amendments will be applied prospectively and are effective for us as of *January 1, 2020*, with early application permitted beginning *January 1, 2017*. We do *not* expect the implementation of these amendments to have a material impact on our consolidated financial statements.

In *January 2017*, the FASB issued amendments to clarify the current guidance on the definition of a business. The objective of the amendments is to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The amendments are effective for us as of *January 1, 2018*, with early application permitted. We do *not* expect the implementation of these amendments to have a material impact on our consolidated financial statements.

In *November 2016*, the FASB issued amendments to the guidance on presentation of restricted cash within the statement of cash flows. The amendments require that restricted cash be included within cash and cash equivalents on the statement of cash flows. The amendments are effective for us as of *January 1, 2018*, and are to be applied retrospectively. Early application is permitted. We do *not* expect the implementation of these amendments to have a material impact on our consolidated financial statements.

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In *February 2016*, the FASB issued amendments to the current guidance on accounting for lease transactions, which is presented in ASC Topic 842 (Leases). Subsequent to *February 2016*, the FASB has issued additional clarifying guidance on certain aspects of this new guidance. The intent of the updated guidance is to increase transparency and comparability among organizations by requiring lessees to recognize assets and liabilities on the balance sheet for the rights and obligations created by leases and to disclose key information about leasing arrangements. Under the new guidance, a lessee will be required to record a right-of-use asset and a lease liability on the balance sheet for all leases with terms longer than *12* months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. The amendments are effective for us as of *January 1, 2019*. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements, with certain practical expedients available. During the *fourth* quarter of *2017*, we performed a preliminary assessment of the impact that the implementation of this guidance will have on our consolidated financial statements. Our assessment is ongoing. We currently expect that the implementation of this new guidance will have a significant impact on our consolidated balance sheet as a result of recording right-of-use assets and lease liabilities for all of our multi-year leases. Under current guidance, *none* of these leases has any related asset or liability recorded on our balance sheet. We do *not* currently expect that the implementation of this new guidance will have a significant impact on our pattern of expense recognition for any of our multi-year leases. However, we are still in the process of completing our assessment and our conclusions about the impact that this new guidance will have on our consolidated financial statements *may* change as we complete our assessment over the next several quarters.

In *May 2014*, the FASB issued new guidance on the recognition of revenue from contracts with customers. Subsequent to *May 2014*, the FASB has issued additional clarifying guidance on certain aspects of this new guidance. This new guidance is presented in ASC Topic 606 (Revenue from Contracts with Customers) and will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. Companies can use either the retrospective or cumulative effect transition method. In *August 2015*, the FASB deferred the effective date of this new guidance for *one* additional year. As a result, this new guidance is effective for us as of *January 1, 2018*. We will implement this new guidance on *January 1, 2018* with a cumulative adjustment to retained earnings as opposed to retrospectively adjusting prior periods. During the *fourth* quarter of *2017*, we completed our review of all our revenue streams to identify any differences in timing, measurement or presentation of revenue recognition. This review included the types of revenue arrangements currently in place including a review of individual customer contracts related to each of our major revenue streams. Based on the results of our assessment, we have concluded that the implementation of this new guidance will *not* have a significant impact on the timing or amount of revenue we recognize in any given period in comparison to the amount recognized under current guidance. We have also determined that we will *not* have a cumulative adjustment to retained earnings to record as of the implementation date. In addition, based on our assessment, we determined that we did *not* need to implement any major changes to existing accounting systems or internal controls.

**(3) ACQUISITION**

On *May 24, 2017*, we completed our acquisition of Ambrell, a manufacturer of precision induction heating systems. Ambrell's systems are used to conduct fast, efficient, repeatable non-contact heating of metals or other electrically conductive materials, in order to transform raw materials into finished parts. The Ambrell acquisition complements our current thermal technologies and broadens our diverse customer base, allowing expansion within many non-semiconductor related markets, such as consumer product packaging, fiber-optics, automotive and other markets.

The purchase price for Ambrell was \$22,000 in cash paid at closing, subject to a customary post-closing working capital adjustment. Additional consideration in the form of earnouts *may* be paid based upon a multiple of adjusted EBITDA for 2017 and 2018, as further discussed below. The acquisition was completed by acquiring all of the outstanding capital stock of Ambrell. Total acquisition costs incurred to complete this transaction were \$935. Acquisition costs were expensed as incurred and included in general and administrative expense.

The acquisition of Ambrell has been accounted for as a business combination using purchase accounting, and, accordingly, the results of Ambrell have been included in our consolidated results of operations from the date of acquisition. The allocation of the Ambrell purchase price was based on fair values as of *May 24, 2017*. The determination of fair value reflects the assistance of *third-party* valuation specialists, as well as our own estimates and assumptions.

The excess of the purchase price over the identifiable intangible and net tangible assets was allocated to goodwill and is *not* deductible for tax purposes. Goodwill is attributed to synergies that are expected to result from the operations of the combined businesses.

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The total purchase price of \$26,733 was comprised of:

Cash paid to acquire the capital stock of Ambrell	\$22,610
Estimated fair value of contingent consideration	4,123
Total purchase price	\$26,733

As noted above, the consideration paid for the acquisition of Ambrell includes contingent consideration in the form of earnouts based on the future adjusted EBITDA of Ambrell. Adjusted EBITDA is earnings (or loss) from operations before interest expense, benefit or provision for income taxes, depreciation and amortization, and excludes other non-recurring income and expense items as defined in the stock purchase agreement for Ambrell. The *first* earnout, to be paid after calendar year 2017 is completed, is an amount equal to 8x Ambrell's adjusted EBITDA for 2017 minus the \$22,000 paid at closing as well as the \$175 management bonus for 2017 accrued at the closing. At *December 31, 2017*, we have accrued \$5,355 as additional acquisition consideration payable on our balance sheet representing the amount of the *first* earnout. The *second* earnout, if any, to be paid after calendar year 2018 is completed, will be an amount equal to 8x Ambrell's adjusted EBITDA for 2018 minus the sum of the \$22,000 paid at closing and the earnout paid with respect to 2017. The 2017 and 2018 earnouts, in the aggregate, are capped at \$18,000. To estimate the fair value of the contingent consideration at the acquisition date, an option based income approach using a Monte Carlo simulation model was utilized due to the non-linear payout structure. This resulted in an estimated fair value of \$4,123, which was recorded as a contingent consideration liability as of the acquisition date.

The total purchase price of \$26,733 has been allocated as follows:

Goodwill	\$12,032
Identifiable intangible assets	16,300
Tangible assets acquired and liabilities assumed:	
Cash	648
Trade accounts receivable	3,621
Inventories	1,917
Other current assets	200
Property and equipment	614
Accounts payable	(1,420)
Accrued expenses	(1,280)
Customer advances	(554)
Deferred tax liability	(5,345)
Total purchase price	\$26,733

We estimated the fair value of identifiable intangible assets acquired using a combination of the income, cost and market approaches. Identifiable intangible assets acquired include customer relationships, customer backlog, technology and trademarks. We generally amortize our finite-lived intangible assets over their estimated useful lives on a straight-line basis, unless an alternate amortization method can be reliably determined. Any such alternate amortization method would be based on the pattern in which the economic benefits of the intangible asset are expected to be consumed.

The following table summarizes the estimated fair value of Ambrell's identifiable intangible assets and their estimated useful lives as of the acquisition date:

	<b>Fair Value</b>	<b>Weighted Average Estimated Useful Life (in years)</b>
Finite-lived intangible assets:		
Customer relationships	\$9,000	9.0
Technology	600	9.0
Customer backlog	500	0.3
Total finite-lived intangible assets	10,100	8.6
Indefinite-lived intangible assets:		
Trademarks	6,200	
Total intangible assets	\$16,300	



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For the period from *May 24, 2017* to *December 31, 2017*, Ambrell contributed \$13,562 of net revenues and had a net loss of \$6,238, which includes the impact of a \$6,976 increase in the amount of our contingent consideration liability since the date of acquisition.

The following unaudited pro forma information gives effect to the acquisition of Ambrell as if the acquisition occurred on *January 1, 2016*. These proforma summaries do *not* reflect any operating efficiencies or costs savings that *may* be achieved by the combined businesses. These proforma summaries are presented for informational purposes only and are *not* necessarily indicative of what the actual results of operations would have been had the acquisition taken place as of that date, nor are they indicative of future consolidated results of operations:

	<b>Year Ended</b>	
	<b>December 31,</b>	
	<b>2017</b>	<b>2016</b>
Net revenues	\$74,421	\$60,410
Net earnings	\$1,637	\$1,796
Diluted earnings per share	\$0.16	\$0.17

The pro forma results shown above do *not* reflect the impact on general and administrative expense of investment advisory costs, legal costs and other costs of \$935 incurred by us as a direct result of the transaction. The pro forma results shown above include a \$6,976 increase in the amount of our contingent consideration liability which we recorded during the *second* half of 2017.

**(4) FAIR VALUE MEASUREMENTS**

ASC Topic 820 (Fair Value Measurement) establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and our own assumptions (unobservable inputs). Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of us. Unobservable inputs are inputs that reflect our assumptions about the inputs that market participants would use in pricing the asset or liability, and are developed based on the best information available in the circumstances.

ASC 820 identifies fair value as the exchange price, or exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As a basis for considering market participant assumptions in fair value measurements, ASC 820 establishes a *three*-tier fair value hierarchy that distinguishes among the following:

Level 1 Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that we have the ability to access.

Level 2 Valuations based on quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are *not* active and models for which all significant inputs are observable, either directly or indirectly.

Level 3 Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by us in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

### **Recurring Fair Value Measurements**

The contingent consideration liability on our balance sheet is measured at fair value on a recurring basis using Level 3 inputs. Our contingent consideration liability is a result of our acquisition of Ambrell on *May 24, 2017*, and it represents the estimated fair value of the additional cash consideration payable that is contingent upon the achievement of certain financial results by Ambrell in *2018*, as discussed more fully in Note 3. We use an option based income approach using a Monte Carlo simulation model to estimate the fair value of the contingent consideration as of the end of each quarter which involves generating various scenarios for projected adjusted EBITDA over a specified time period, calculating the associated contingent consideration payments and discounting the average payments to present value. Significant variation in the amount of the estimated fair value of contingent consideration from period to period is possible as the fair value is affected by our then current estimation of future events including future net revenues and other items that affect future projected adjusted EBITDA.

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During the *second* half of 2017, we recorded a \$6,976 increase in the fair value of our contingent consideration liability. These increases primarily reflect higher actual adjusted EBITDA for the year ended *December 31, 2017* as a result of significantly higher than expected levels of net revenues and EBITDA in the *fourth* quarter of 2017 and an increase in the projected adjusted EBITDA for the year ended *December 31, 2018*, also as a result of current forecasts for net revenues and EBITDA in 2018 which exceed the amounts projected as of the acquisition date.

The following fair value hierarchy table presents information about liabilities measured at fair value on a recurring basis:

	Amounts at Fair Value	Fair Value Measurement Using		
		Level 1	Level 2	Level 3
<b>As of December 31, 2017</b>				
Contingent consideration liability	\$ 5,744	\$-	\$ -	\$5,744

Changes in the fair value of our Level 3 contingent consideration liability for the year ended *December 31, 2017* were as follows:

	Year Ended December 31, 2017
Balance at beginning of period	\$ -
Contingent consideration liability established in connection with the acquisition of Ambrell	4,123
Fair value adjustment	6,976
Transfer of contingent consideration liability to 2017 earnout payable	(5,355 )
Balance at end of period	\$ 5,744

**(5) GOODWILL AND INTANGIBLE ASSETS**

Goodwill and intangible assets on our balance sheets are the result of our acquisitions of Sigma Systems Corp. ("Sigma") in *October 2008*, Thermonics, Inc. ("Thermonics") in *January 2012* and Ambrell in *May 2017*. All of our goodwill and intangible assets are allocated to our Thermal segment.

Goodwill

Changes in the amount of the carrying value of goodwill for the year ended *December 31, 2017* are as follows:

	<b>Sigma</b>	<b>Thermonics</b>	<b>Ambrell</b>	<b>Total</b>
Balance - January 1, 2017	\$1,656	\$ 50	\$-	\$1,706
Acquisition of Ambrell	-	-	12,032	12,032
Balance - December 31, 2017	\$1,656	\$ 50	\$12,032	\$13,738

**Intangible Assets**

Changes in the amount of the carrying value of finite-lived intangible assets for the year ended *December 31, 2017* are as follows:

Balance - January 1, 2017	\$365
Acquisition of Ambrell	10,100
Amortization	(1,161)
Balance - December 31, 2017	\$9,304

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The following tables provide further detail about our intangible assets as of *December 31, 2017* and *2016*:

	<b>December 31, 2017</b>		
	<b>Gross Carrying Amount</b>	<b>Accumulated Amortization</b>	<b>Net Carrying Amount</b>
Finite-lived intangible assets:			
Customer relationships	\$ 10,480	\$ 1,828	\$ 8,652
Technology	600	95	505
Patents	590	463	127
Software	270	250	20
Trade name	140	140	-
Customer backlog	500	500	-
Total finite-lived intangible assets	12,580	3,276	9,304
Indefinite-lived intangible assets:			
Trademarks	6,710	-	6,710
Total intangible assets	\$ 19,290	\$ 3,276	\$ 16,014

	<b>December 31, 2016</b>		
	<b>Gross Carrying Amount</b>	<b>Accumulated Amortization</b>	<b>Net Carrying Amount</b>
Finite-lived intangible assets:			
Customer relationships	\$ 1,480	\$ 1,328	\$ 152
Patents	590	424	166
Software	270	223	47
Trade name	140	140	-
Total finite-lived intangible assets	2,480	2,115	365
Indefinite-lived intangible assets:			
Sigma trademark	510	-	510
Total intangible assets	\$ 2,990	\$ 2,115	\$ 875

We generally amortize our finite-lived intangible assets over their estimated useful lives on a straight-line basis, unless an alternate amortization method can be reliably determined. Any such alternate amortization method would be based on the pattern in which the economic benefits of the intangible asset are expected to be consumed. *None* of our intangible assets have any residual value.

Total amortization expense for our finite-lived intangible assets was \$1,161 and \$229, respectively, for the years ended *December 31, 2017* and *2016*. The following table sets forth the estimated annual amortization expense for each

of the next *five* years:

2018 \$1,102  
2019 \$1,257  
2020 \$1,234  
2021 \$1,227  
2022 \$1,167

**Impairment of Goodwill and Indefinite Life Intangible Assets**

During *December 2017* and *2016*, we assessed our goodwill and indefinite life intangible asset for impairment in accordance with the requirements of ASC Topic 350 (Intangibles - Goodwill and Other). Our goodwill impairment assessment is based upon a combination of the income approach, which estimates the fair value of our reporting units based upon a discounted cash flow approach, and the market approach which estimates the fair value of our reporting units based upon comparable market multiples. This fair value is then reconciled to our market capitalization at year end with an appropriate control premium. The discount rates used in *2017* and *2016* for the discounted cash flows were *14.5%* and *18.5%*, respectively. The selection of these rates was based upon our analysis of market based estimates of capital costs and discount rates. The peer companies used in the market approach operate in our market segment. The determination of the fair value of our reporting units requires management to make significant estimates and assumptions including the selection of appropriate peer group companies, control premiums, discount rate, terminal growth rates, forecasts of revenue and expense growth rates, income tax rates, changes in working capital, depreciation, amortization and capital expenditures. Changes in assumptions concerning future financial results or other underlying assumptions could have a significant impact on either the fair value of the reporting unit or the amount of the goodwill impairment charge.

During the goodwill impairment assessment in both *2017* and *2016*, we performed a Step I test to identify potential impairment, in which the fair value of the Thermal reporting unit was compared with its book value. This assessment indicated *no* impairment existed as the fair value of this reporting unit was determined to exceed its carrying value.

During the indefinite life intangible asset impairment assessment in both *2017* and *2016*, we compared the fair value of our intangible asset with its carrying amount. This assessment indicated *no* impairment existed as the fair value of the intangible assets exceeded their carrying values in both *2017* and *2016*.

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As previously noted, our long-lived assets consist of our finite-lived intangible assets and property and equipment. During 2016, the operations of what was then reported as our Mechanical Products segment were substantially restructured. However, as this segment still experienced an operating loss for 2016, we performed an assessment of the long-lived assets of this segment for impairment during *December 2016*. Our assessment indicated that the property and equipment that was allocated to this segment was *not* impaired. During 2016, we did *not* review the long lived assets of our remaining operations for impairment as there were *no* events or changes in business circumstances that would indicate an impairment might exist. During 2017, we did *not* review any of our long lived assets for impairment as there were *no* events or changes in business circumstances that would indicate an impairment might exist.

**(6) MAJOR CUSTOMERS**

During the years ended *December 31, 2017* and *2016*, Hakuto Co. Ltd., *one* of our distributors, accounted for *11%* and *13%* of our consolidated net revenues, respectively. These revenues were generated by our Thermal segment. During the years ended *December 31, 2017* and *2016*, Texas Instruments Incorporated accounted for *11%* and *10%* of our consolidated net revenues, respectively. While both of our operating segments sold products to this customer, these revenues were primarily generated by our EMS segment. During the years ended *December 31, 2017* and *2016*, *no* other customer accounted for *10%* or more of our consolidated net revenues.

**(7) INVENTORIES**

Inventories held at *December 31* were comprised of the following:

	<b>2017</b>	<b>2016</b>
Raw materials	\$3,424	\$2,695
Work in process	791	728
Inventory consigned to others	64	81
Finished goods	687	172
Total inventories	\$4,966	\$3,676

**(8) OTHER CURRENT LIABILITIES**

Other current liabilities at *December 31* were comprised of the following:

	<b>2017</b>	<b>2016</b>
Accrued warranty	\$233	\$125
Other	166	48
Total other current liabilities	\$399	\$173

**(9) DEBT****Letters of Credit**

We have issued letters of credit as the security deposits for certain of our domestic leases. These letters of credit are secured by pledged certificates of deposit which are classified as Restricted Certificates of Deposit on our balance sheets. The terms of our leases require us to renew these letters of credit at least 30 days prior to their expiration dates for successive terms of *not* less than *one* year until lease expiration. Our outstanding letters of credit at *December 31, 2017* and *2016* consisted of the following:

<b><u>Facility</u></b>	<b>Original L/C Issue Date</b>	<b>L/C Expiration Date</b>	<b>Lease Expiration Date</b>	<b>Letters of Credit Amount Outstanding</b>	
				<b>Dec. 31 2017</b>	<b>Dec. 31 2016</b>
Mt. Laurel, NJ	3/29/2010	3/31/2018	4/30/2021	\$ 125	\$ 125
Mansfield, MA	10/27/2010	11/08/2018	8/31/2021	50	50
				\$ 175	\$ 175



Table of Contents**(10) COMMITMENTS AND CONTINGENCIES****Operating Lease Commitments**

We lease our offices, warehouse facilities and certain equipment under non-cancellable operating leases which expire at various dates through 2029. Total rental expense for the years ended *December 31, 2017* and *2016* was *\$1,600* and *\$1,241*, respectively. Certain of our operating leases contain predetermined fixed escalations of minimum rentals and rent holidays during the original lease terms. Rent holidays are periods during which we have control of the leased facility but are *not* obligated to pay rent. For these leases, we recognize the related rental expense on a straight-line basis over the life of the lease, which includes any rent holiday, and record the difference between the amounts charged to operations and amounts paid as Accrued Rent on our balance sheet. In addition to the monthly rental payments due, most of our leases for our offices and warehouse facilities require us to pay our portion of the common area maintenance, property taxes and insurance charges incurred by the landlord for the facilities which we occupy. These amounts are *not* included in the minimum rental commitments disclosed below as they are based on actual charges incurred in the periods to which they apply.

The aggregate minimum rental commitments under the non-cancellable operating leases in effect at *December 31, 2017* are as follows:

2018	\$1,778
2019	1,638
2020	1,592
2021	844
2022	291
Thereafter	1,739
Total	\$7,882

**(11) INCOME TAXES**

We are subject to Federal and certain state income taxes. In addition, we are taxed in certain foreign countries.

As previously discussed in Note 2, on *December 22, 2017* the President of the United States signed into law the Tax Act. The *two* principal elements of the Tax Act impacting our *2017* consolidated statement of operations and our balance sheet as of *December 31, 2017* are the reduction in the corporate tax rate from *35%* to *21%* and the *one-time* transition tax that is imposed on the previously unremitted earnings of our foreign subsidiaries. As a result of the legislative changes enacted, we were required to revalue our deferred tax assets and liabilities to the new rate of *21%* as of *December 31, 2017*, which resulted in our recording a current period tax benefit of *\$1,743* in our *2017* consolidated statement of operations and a corresponding reduction in the amount of the net deferred tax liability. Due to the complexities involved in determining the previously unremitted earnings of our foreign subsidiaries, we are still

in the process of obtaining, preparing and analyzing the required information. We have recorded a provisional amount for the transition tax payable on those unremitted earnings. The provisional amount recorded, net of related foreign tax credits, is a tax of approximately \$476. The rate of tax paid is 14% of the foreign earnings.

Earnings before income taxes was as follows:

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2017</b>	<b>2016</b>
Domestic	\$2,580	\$3,345
Foreign	1,258	862
Total	\$3,838	\$4,207

Income tax expense (benefit) was as follows:

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2017</b>	<b>2016</b>
Current		
Domestic -- Federal	\$4,106	\$1,295
Domestic -- state	175	74
Foreign	212	45
Total	\$4,493	\$1,414
Deferred		
Domestic -- Federal	\$(1,886)	\$(39 )
Domestic -- state	244	10
Foreign	12	164
Total	(1,630)	135
Income tax expense	\$2,863	\$1,549

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Deferred income taxes reflect the net tax effect of net operating loss and tax credit carryforwards as well as temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The following is a summary of the significant components of our deferred tax assets and liabilities as of *December 31, 2017* and *2016*:

	<b>December 31,</b>	
	<b>2017</b>	<b>2016</b>
Deferred tax assets:		
Net operating loss (state and foreign)	\$444	\$71
Tax credit carryforwards	206	-
Inventories	185	182
Accrued vacation pay and stock-based compensation	156	161
Depreciation of property and equipment	97	580
Allowance for doubtful accounts	47	55
Accrued warranty	20	9
Acquisition costs	15	28
Intangibles	-	311
Other	15	7
Total	1,185	1,404
Valuation allowance	(370 )	-
Deferred tax assets	815	1,404
Deferred tax liabilities:		
Net intangible assets	(3,421)	(212 )
Unremitted earnings of foreign subsidiaries	-	(82 )
Deferred tax liabilities	(3,421)	(294 )
Net deferred tax assets (liabilities)	\$(2,606)	\$1,110

The net change in the valuation allowance for the years ended *December 31, 2017* and *2016* was an increase of \$370 and a decrease of \$15, respectively. In assessing the ability to realize the deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will *not* be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during periods in which those temporary differences become deductible. We consider the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment. In order to fully realize the total deferred tax assets, we will need to generate future taxable income prior to the expiration of net operating loss and tax credit carryforwards which expire in various years through 2037.

An analysis of the effective tax rate for the years ended *December 31, 2017* and *2016* and a reconciliation from the expected statutory rate of 35% (for 2017) and 34% (for 2016) is as follows:

**Years Ended  
December 31,**

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	<b>2017</b>	<b>2016</b>
Expected income tax provision at U.S. statutory rate	\$1,343	\$1,430
Increase (decrease) in tax from:		
Federal tax rate changes	(1,843)	-
Current year tax credits (foreign and research)	(379 )	(140 )
Domestic production activities deduction	(290 )	(112 )
Foreign income tax rate differences	(229 )	(258 )
Restricted stock	(59 )	-
Nondeductible expenses	2,463	14
Domestic tax expense, net of Federal benefit	791	55
Federal transition tax payable	476	-
Deemed dividend from foreign subsidiaries	423	396
Acquisition costs	142	-
NOL carryforwards utilized	36	180
Changes in valuation allowance	17	(15 )
Other	(28 )	(1 )
Income tax expense	\$2,863	\$1,549

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In accounting for income taxes, we follow the guidance in ASC Topic 740 (Income Taxes) regarding the recognition and measurement of uncertain tax positions in our financial statements. Recognition involves a determination of whether it is more likely than *not* that a tax position will be sustained upon examination with the presumption that the tax position will be examined by the appropriate taxing authority having full knowledge of all relevant information. Our policy is to record interest and penalties associated with unrecognized tax benefits as additional income taxes in the statement of operations. As of *December 31, 2017* and *2016*, we did *not* have an accrual for uncertain tax positions.

We file U.S. income tax returns and multiple state and foreign income tax returns. With few exceptions, the U.S. and state income tax returns filed for the tax years ending on *December 31, 2015* and thereafter are subject to examination by the relevant taxing authorities. During the *first* quarter of *2017*, the U.S. taxing authority completed an examination of our federal income tax return for the year ended *December 31, 2014* and there were *no* changes to the tax return as originally filed.

**(12) LEGAL PROCEEDINGS**

From time to time we *may* be a party to legal proceedings occurring in the ordinary course of business. We are *not* currently involved in any legal proceedings the resolution of which we believe could have a material effect on our business, financial position, results of operations or long-term liquidity.

**(13) STOCK-BASED COMPENSATION PLAN**

As of *December 31, 2017*, we have unvested restricted stock awards and stock options outstanding which were granted under the inTEST Corporation 2007 Stock Plan (the "*2007 Stock Plan*") and the inTEST Corporation 2014 Stock Plan (the "*2014 Stock Plan*"). The *2007 Stock Plan* was approved at our annual meeting of stockholders held on *June 13, 2007* and permits the granting of stock options or restricted stock for up to *500,000* shares of our common stock to officers, other key employees and consultants. The *2014 Stock Plan* was approved at our annual meeting of stockholders held on *June 25, 2014* and permits the granting of stock options, restricted stock, stock appreciation rights or restricted stock units for up to *500,000* shares of our common stock to directors, officers, other key employees and consultants. As of *December 31, 2017*, there were *345,200* aggregate shares available to grant under these plans.

Our unvested restricted stock awards and stock options are accounted for based on their grant date fair value. As of *December 31, 2017*, total compensation expense to be recognized in future periods was *\$455*. The weighted average period over which this expense is expected to be recognized is *2.9* years.

The following table summarizes the compensation expense we recorded during *2017* and *2016*, related to unvested shares of restricted stock and stock options.

	<b>Years Ended December 31,</b>	
	<b>2017</b>	<b>2016</b>
Cost of revenues	\$6	\$10
Selling expense	-	6
Engineering and product development expense	5	11
General and administrative expense	333	242
	<b>\$344</b>	<b>\$269</b>

There was *no* compensation expense capitalized in *2017* or *2016*.

### **Stock Options**

We record compensation expense for stock options based on the fair market value of the options as of the grant date. *No* option *may* be granted with an exercise period in excess of *ten* years from the date of grant. Generally, stock options will be granted with an exercise price equal to the fair market value of our stock on the date of grant and will vest over *four* years.

The fair value for stock options granted during *2017* and *2016* was estimated at the date of grant using the Black-Scholes option pricing model with the following weighted average assumptions:

	<b>2017</b>	<b>2016</b>
Risk-free interest rate	2.14%	1.30%
Dividend yield	0.00%	0.00%
Expected common stock market price volatility factor	.39	.40
Weighted average expected life of stock options (years)	6	4

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The per share weighted average fair value of stock options issued during 2017 and 2016 was \$2.64 and \$1.43, respectively.

The following table summarizes the activity related to stock options for the two years ended December 31, 2017:

	Number of Shares	Weighted Average Exercise Price
Options outstanding, January 1, 2016	-	\$ -
Granted	19,800	4.37
Exercised	-	-
Canceled	-	-
Options outstanding, December 31, 2016 (none exercisable)	19,800	4.37
Granted	96,000	6.35
Exercised	-	-
Canceled	(39,400 )	6.08
Options outstanding, December 31, 2017 (4,950 exercisable)	76,400	5.98

Restricted Stock Awards

We record compensation expense for restricted stock awards (unvested shares) based on the quoted market price of our stock at the grant date and amortize the expense over the vesting period. Restricted stock awards generally vest over four years.

The following table summarizes the activity related to unvested shares for the two years ended December 31, 2017:

	Number of Shares	Weighted Average Grant Date Fair Value
Unvested shares outstanding, January 1, 2016	63,750	3.64
Granted	86,400	4.27
Vested	(53,125 )	3.94
Forfeited	-	-
Unvested shares outstanding, December 31, 2016	97,025	4.04
Granted	66,000	6.54
Vested	(69,100 )	4.65
Forfeited	(18,700 )	5.59

Unvested shares outstanding, December 31, 2017    75,225    5.29

The total fair value of the shares that vested during the years ended *December 31, 2017* and *2016* was \$493 and \$208, respectively, as of the vesting dates of these shares.

#### **(14) STOCK REPURCHASE PLAN**

On *October 27, 2015*, our Board of Directors authorized the repurchase of up to \$5,000 of our common stock from time to time on the open market, in compliance with Rule *10b-18* under the Securities Exchange Act of *1934*, or in privately negotiated transactions (the "*2015* Repurchase Plan"). Repurchases *may* also be made under trading plans entered into with RW Baird & Co. (each a "*10b5-1* Plan"), which permit shares to be repurchased when we might otherwise be precluded from doing so under insider trading laws. The *2015* Repurchase Plan does *not* obligate us to repurchase any particular amount of common stock and *may* be suspended or discontinued at any time without prior notice. The *2015* Repurchase Plan is funded using our operating cash flow or available cash. The timing, price and amount of any shares repurchased under the *2015* Repurchase Plan is determined by our management, based on our evaluation of market conditions and other factors. To date, all purchases have been made in accordance with *10b5-1* Plans which provided for purchases to be made so long as the price did *not* exceed a maximum price. Recently, the price of our shares has exceeded the cap. Management is considering new parameters for future purchases and *may* enter into a new *10b5-1* Plan at some point under those new parameters. As of *December 31, 2017*, all of the Company's *10b5-1* Plans had expired.

During *2017* and *2016*, we repurchased *13,883* and *241,805* shares under the *2015* Repurchase Plan, respectively. The total cost to repurchase these shares, including fees paid to our broker, was \$62 and \$978, respectively. As of *December 31, 2017*, we had repurchased a total of *297,020* shares under the *2015* Repurchase Plan at a cost of \$1,195. All of the repurchased shares were retired.



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**(15) EMPLOYEE BENEFIT PLANS**

We have defined contribution 401(k) plans for our employees who work in the U.S. All permanent employees of inTEST Corporation, Temptronic Corporation (“Temptronic”) and inTEST Silicon Valley Corporation who are at least 18 years of age are eligible to participate in the inTEST Corporation Incentive Savings Plan. We match employee contributions dollar for dollar up to 10% of the employee's annual compensation, with a maximum limit of \$5. Employer contributions vest ratably over four years. Matching contributions are discretionary. For the years ended December 31, 2017 and 2016, we recorded \$338 and \$347 of expense for matching contributions, respectively.

All permanent employees of Ambrell are immediately eligible to participate in the Ambrell Corporation Savings & Profit Sharing Plan (the "Ambrell Plan") upon employment and are eligible for employer matching contributions after completing one year of service, as defined in the Ambrell Plan. The Ambrell Plan allows eligible employees to make voluntary contributions up to 100% of compensation, up to the federal government contribution limits. We will make a matching contribution of 25% of each employee's contributions up to a maximum of 2% of such employee's annual compensation. From the date of acquisition through December 31, 2017, we made matching contributions of \$35.

**(16) SEGMENT INFORMATION**

As discussed in Note 1, during 2016, we reorganized our business from three product segments (Thermal Products, Mechanical Products and Electrical Products) into two product segments (Thermal and EMS). Accordingly, effective January 1, 2017, we have two reportable segments, which are also our reporting units. Prior period information has been reclassified to be comparable to the presentation for 2017.

Thermal includes the operations of Temptronic, Thermonics, Sigma, inTEST Thermal Solutions GmbH (Germany), inTEST Pte, Limited (Singapore) and Ambrell, which we acquired in May 2017, as discussed in Note 3. Sales of this segment consist primarily of temperature management systems which we design, manufacture and market under our Temptronic, Thermonics and Sigma product lines, and precision induction heating systems which are designed, manufactured and marketed by Ambrell. In addition, this segment provides post-warranty service and support.

EMS includes the operations of our manufacturing facilities in Mt. Laurel, New Jersey and Fremont, California. Sales of this segment consist primarily of manipulator, docking hardware and tester interface products, which we design, manufacture and market.

We operate our business worldwide and sell our products both domestically and internationally. Both of our segments sell to semiconductor manufacturers, third-party test and assembly houses and ATE manufacturers. Thermal also sells into a variety of markets outside of the ATE market, including the automotive, consumer electronics, consumer product packaging, defense/aerospace, energy, fiber optics, industrial, telecommunications and other markets.

**Years Ended  
December 31,**

	2017	2016
<b><i>Net revenues from unaffiliated customers:</i></b>		
Thermal	\$42,233	\$24,033
EMS	24,568	16,194
	\$66,801	\$40,227
<b><i>Depreciation/amortization:</i></b>		
Thermal	\$1,628	\$440
EMS	151	159
	\$1,779	\$599
<b><i>Operating income (loss):</i></b>		
Thermal	\$(822 )	\$4,210
EMS	6,830	989
Corporate	(2,397 )	(1,053 )
	\$3,611	\$4,146
<b><i>Earnings (loss) before income tax expense (benefit):</i></b>		
Thermal	\$(686 )	\$4,193
EMS	6,869	1,021
Corporate	(2,345 )	(1,007 )
	\$3,838	\$4,207
<b><i>Income tax expense (benefit):</i></b>		
Thermal	\$1,665	\$1,544
EMS	1,819	376
Corporate	(621 )	(371 )
	\$2,863	\$1,549
<b><i>Net earnings (loss):</i></b>		
Thermal	\$(2,351 )	\$2,649
EMS	5,050	645
Corporate	(1,724 )	(636 )
	\$975	\$2,658

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	<b>Years Ended December 31, 2017 2016</b>	
<i>Capital expenditures:</i>		
Thermal	\$659	\$262
EMS	86	77
	\$745	\$339

	<b>December 31, 2017 2016</b>	
<i>Identifiable assets:</i>		
Thermal	\$50,408	\$19,893
EMS	12,085	22,951
	\$62,493	\$42,844

The following table provides information about our geographic areas of operation. Net revenues from unaffiliated customers are based on the location to which the goods are shipped.

	<b>Years Ended December 31, 2017 2016</b>	
<i>Net revenues from unaffiliated customers:</i>		
U.S.	\$20,205	\$13,061
Foreign	46,596	27,166
	\$66,801	\$40,227

	<b>December 31, 2017 2016</b>	
<i>Property and equipment:</i>		
U.S.	\$991	\$691
Foreign	550	253
	\$1,541	\$944

**(17) QUARTERLY CONSOLIDATED FINANCIAL DATA (Unaudited)**

The following tables present certain unaudited consolidated quarterly financial information for each of the *eight* quarters ended *December 31, 2017*. In our opinion, this quarterly information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are *not* necessarily indicative of results for the full year or for any future period.

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Year-over-year quarterly comparisons of our results of operations *may not* be as meaningful as the sequential quarterly comparisons set forth below that tend to reflect the cyclical and seasonal activity of the semiconductor and ATE markets. Quarterly fluctuations in expenses are related directly to sales activity and volume and *may* also reflect the timing of operating expenses incurred throughout the year.

	Quarters Ended				Total
	3/31/17	6/30/17	9/30/17 <sup>(1)</sup>	12/31/17 <sup>(2)(3)</sup>	
Net revenues	\$14,180	\$15,888	\$17,352	\$19,381	\$66,801
Gross margin	7,728	8,421	8,796	9,745	34,690
Earnings (loss) before income tax expense	3,172	2,336	2,841	(4,511)	) 3,838
Income tax expense	1,094	891	823	55	2,863
Net earnings (loss)	2,078	1,445	2,018	(4,566)	) 975
Net earnings (loss) per common share - basic	\$0.20	\$0.14	\$0.20	\$(0.44)	) \$0.09
Weighted average common shares outstanding - basic	10,264,565	10,277,155	10,288,325	10,308,243	10,284,572
Net earnings (loss) per common share - diluted	\$0.20	\$0.14	\$0.19	\$(0.44)	) \$0.09
Weighted average common shares outstanding - diluted	10,295,337	10,334,894	10,351,009	10,308,243	10,339,313

	Quarters Ended				Total
	3/31/16	6/30/16	9/30/16	12/31/16	
Net revenues	\$8,647	\$10,485	\$10,823	\$10,272	\$40,227
Gross margin	4,067	5,329	5,577	5,405	20,378
Earnings before income tax expense	124	749	1,721	1,613	4,207
Income tax expense	43	263	631	612	1,549
Net earnings	81	486	1,090	1,001	2,658
Net earnings per common share - basic	\$0.01	\$0.05	\$0.11	\$0.10	\$0.26
Weighted average common shares outstanding - basic	10,390,002	10,295,836	10,295,447	10,273,702	10,313,747
Net earnings per common share - diluted	\$0.01	\$0.05	\$0.11	\$0.10	\$0.26
Weighted average common shares outstanding - diluted	10,404,244	10,310,692	10,318,715	10,297,439	10,332,920

- (1) The quarter ended *September 30, 2017* includes a \$549 reduction in the fair value of contingent consideration, which was *not* taxable.
- (2) The quarter ended *December 31, 2017* includes a \$7,525 increase in the fair value of contingent consideration, which was *not* deductible for tax purposes.
- (3) The quarter ended *December 31, 2017* includes adjustments related to tax legislation enacted in *December 2017*, as discussed in Note 2 and 11.



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(in thousands)

	<b>Balance at Beginning of Period</b>	<b>Expense (Recovery)</b>	<b>Deductions</b>	<b>Balance at End of Period</b>
<b>Year Ended December 31, 2017</b>				
Allowance for doubtful accounts	\$ 146	\$ 68	\$ (1 )	\$ 213
Warranty reserve	125	209	(101 )	233
<b>Year Ended December 31, 2016</b>				
Allowance for doubtful accounts	\$ 146	\$ -	\$ -	\$ 146
Warranty reserve	94	125	(94 )	125

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