

UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

**FORM 10-K**

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
For the fiscal year ended March 30, 2019

Or

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
For the transition period from \_\_\_ to \_\_\_.

Commission File No. 001-14605

**GIGA-TRONICS INCORPORATED**

(Exact name of registrant as specified in its charter)

<u>California</u> (State or other jurisdiction of incorporation or organization)	<u>94-2656341</u> (I.R.S. Employer Identification No.)
<u>5990 Gleason Drive, Dublin, CA</u> (Address of principal executive offices)	<u>94568</u> (Zip Code)

Registrant's telephone number, including area code: (925) 328-4650

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

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock, No par value	GIGA	OTCQB Market

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

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

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

The aggregate market value of voting and non-voting common equity held by non-affiliates of the Registrant computed by reference to the price at which the common equity was sold or the average bid and asked prices as of September 29, 2018 was \$3,046,083.

There were a total of 11,360,511 shares of the Registrant's Common Stock outstanding as of May 20, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the following documents have been incorporated by reference into the parts indicated:

<u>PART OF FORM 10-K</u>	<u>DOCUMENT</u>
PART III	Registrant's proxy statement for its 2018 Annual Meeting of Shareholders to be filed no later than 120 days after the close of the fiscal year ended March 30, 2019.

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Unless the context otherwise requires, we use the terms "Giga-tronics Incorporated," "Giga-tronics," "we," "us," "the Company" and "our" in this Annual Report on Form 10-K to refer to Giga-tronics Incorporated and its wholly owned subsidiary.

## **FORWARD-LOOKING INFORMATION**

This Annual Report on Form 10-K includes "forward-looking statements" within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including but not limited to certain disclosures contained in Item 1A, "Risk Factors" and Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations". These forward-looking statements include, but are not limited to, statements about our plans, objectives, representations and contentions, and are not historical facts and typically are identified by the use of terms such as "may," "will," "should," "could," "expect," "plan," "anticipate," "believe," "estimate," "predict," "potential," "continue" and similar words, although some forward-looking statements are expressed differently. You should be aware that the forward-looking statements included herein represent management's current judgment and expectations, but our actual results, events and performance could differ materially from those expressed or implied by forward-looking statements. We do not intend to update any of these forward-looking statements or publicly announce the results of any revisions to these forward-looking statements, other than as is required under the federal securities laws.

### **PART 1**

#### **ITEM 1. BUSINESS**

##### **General**

Giga-tronics Incorporated consists of two business segments, those of our wholly-owned subsidiary, Microsource Inc. ("Microsource") and those of our Giga-tronics Division ("Giga-tronics"). Our Microsource operation designs and manufactures Microwave Integrated Components (MICs) for military airborne applications while Giga-tronics designs and manufactures real time solutions for RADAR / Electronic Warfare (EW) test and deployment in a laboratory setting.

Giga-tronics was incorporated on March 5, 1980. We acquired Microsource on May 18, 1998.

The Company's principal executive offices are located at 5990 Gleason Drive, Dublin, California and our telephone number at that location is (925) 328-4650. Our website address is <http://www.gigatronics.com>.

##### **Reporting Segments**

Our business has two reporting segments: Microsource and the Giga-tronics Division.

##### **Microsource**

Microsource develops and manufactures MICs for operational use in airborne military applications. Microsource's two largest customers are prime contractors for which we develop and manufacture RADAR filters used in fighter jet aircrafts. Revenues from Microsource comprised the majority of our revenues for the fiscal years ended March 30, 2019 and March 31, 2018.

##### **Giga-tronics Division**

Our Giga-tronics Division designs, manufactures and markets a family of functional test products and integrates those test products along with third party hardware and software to create full test solutions for the RADAR/EW segment of the defense electronics market. Our RADAR/EW test solutions are used to evaluate and improve the performance of RADAR and EW systems. Giga-tronics Division customers include major defense prime contractors, the United States armed services and research institutes.

For more information regarding the Company's two reporting segments, see "Part II-Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements, Note 10, Significant Customers and Industry Segment Information."

## Products and Markets

### Microsource

Microsource's primary business is the design of custom Microwave Integrated Components as well as the production of MIC components using chip and wire assembly methods. Microsource offers a line of tunable, synthesized Band Reject Filters ("BRF") for solving interference problems in RADAR/EW applications. Self-protection systems onboard high performance military aircraft often require RADAR filters to block electromagnetic interference generated by other onboard electronic systems, particularly the aircraft's main RADAR. Our high-speed, tunable notch filters can quickly block interference from both continuous wave and wide bandwidth emissions. Using proprietary driver and phase lock technology, these filters offer tuning speeds that are up to ten times faster than traditional filter designs. We design these filters specifically for each application.

While our RADAR filter technology may be used in a variety of operational applications and as components in microwave instruments and devices, Microsource's two largest customers are prime contractors for whom we develop and manufacture RADAR filters used in fighter aircrafts. Microsource serves the aftermarket for operational hardware associated with the United States Government's RADAR Modernization Program for prior generation fighter aircraft (i.e., the F/A-18E, F-15D and F-16 jets) to extend their useful lives. These RADAR filters are designed to withstand the rigors of operating under extreme conditions. They must be able to operate while exposed to the shock, vibration, high altitudes and temperature extremes experienced during jet flight without any cooling or heating from the aircraft.

Our customers require that Microsource be certified to the stringent AS9100D aerospace quality standard. Microsource routinely maintains a top rating from its customers and over the years has received a "Supplier of the Year" award, as well as multiple "Gold Supplier" awards from one of our prime customers. We received our most recent customer award in April of 2019 for delivering consistent product quality and on-time shipments during 2018.

Microsource's revenues have grown as prime contractors began upgrading additional aircraft. Initially Microsource supplied filters for one fighter jet, the F/A-18E. During our 2014 fiscal year, the prime contractor added a second aircraft, the F-15. Additionally, during our 2017 fiscal year, a second prime contractor added a third aircraft, the F-16. As a result, Microsource's revenue has climbed to over \$9 million in fiscal 2019, which ended March 30, 2019. Microsource is a sole-source supplier of filters for these three fighter jets and we expect that the business will continue to be a significant source of our future revenue.

### Giga-tronics Division

Our Giga-tronics Division designs, manufactures and markets a family of functional test products for the RADAR/EW segment of the defense electronics market. Our RADAR/EW test products are used in a laboratory setting to evaluate and improve the performance of RADAR/EW systems. Giga-tronics Division customers include major prime defense contractors, the armed services (primarily in the U.S.) and research institutes.

Our goal is to be the leading supplier of solutions for evaluating RADAR and EW systems and we believe our Advanced Signal Generation and Analysis ("ASGA") functional test platform, which we have been developing since 2012, will allow us to accomplish this goal. The same digital technology that has revolutionized commercial communications and automotive electronics is now being applied to advanced RADAR and EW systems. This shift in technology limits the effectiveness of traditional test solutions, which are unable to properly stimulate and actively interact with the RADAR and EW systems being tested. The Giga-tronics ASGA platform, however, has control capabilities and real-time behavior built into the fabric of its architecture. This architecture enables test solutions with real time responses and closed loop behavior that we believe is unavailable from any competitor.

#### *Technology Shift in RADAR Technology*

Historically, U.S. defense electronic systems have embodied the most advanced capabilities available. Major investments in integrated circuits, computing technology and signal processing algorithms, made by the U.S. Defense Department during the 1960s, through the 1980s, gave the U.S. its edge in defensive capability. However, these technologies slowly found their way into consumer products and services, such as desktop computers, music players, smartphones and the world-wide-web. The rapid acceleration and global proliferation of these technologies by commercial companies has allowed U.S. allies and potential adversaries alike to take a significant leap forward in RADAR and EW technology.

The democratization of these advanced technologies has permitted potential adversaries to “catch-up” and in many cases surpass U.S. military dominance in the air and at sea. The U.S. Defense Department recognizes these threats and has requested that Congress divert substantial resources from other programs to fund development of the next generation of RADAR and EW systems. These new systems may employ machine learning and artificial intelligence technologies that will require new approaches for test and evaluation. We believe the market for these new test technologies will remain robust even through typical business cycles.

Traditional open loop test techniques will also no longer be adequate to exercise the new cognitive systems through all their modes nor will they be able to interact in a closed loop manner to evaluate machine learning algorithms in real-time. We believe that prime contractors and government test facilities will require hardware-in-the-loop (“HWIL”) testing. HWIL testing calls for building a realistic simulation of the environment the new devices will experience when deployed. This means the new test solutions must stimulate the system under test (SUT) with high-fidelity signals and then modify its stimulation in real-time in response to the evolving behavior of the SUT. We believe our ASGA platform is the first to offer this closed-loop test functionality. Traditional test solutions that use synthesizers, modulators and spectrum analyzers are poorly suited to the task and this shift has provided a market opportunity for Giga-tronics. We believe, therefore, that competitors seeking to develop competing closed-loop test functionality face significant barriers because developing close-loop test systems requires a completely new investment from the ground up.

#### *Giga-tronics’ Solution*

Giga-tronics took the approach to develop a HWIL test platform similar to a RADAR or EW system in order to be prepared for the new challenges, but with the added difficult requirement of being broadband with real-time control of Frequency, Phase, and Amplitude. Giga-tronics limited its investment to the microwave portion of a RADAR or EW system’s architecture and has leveraged third party hardware partners to acquire the digital portion of the test solutions. Instead of building a traditional synthesizer, Giga-tronics developed a broad-band up-converter. Instead of building a spectrum analyzer, Giga-tronics invented a down-converter which uses a similar internal control structure as the up-converter. Consequently, we believe that Giga-tronics is the only solution provider able to offer a real-time closed loop RADAR emulator.

We developed our ASGA test systems to address three primary goals:

1. Our ASGA solution was designed specifically for HWIL testing and offers a real-time, dynamic, closed loop test solution that simulates these adaptive/cognitive RADAR/EW devices for RADAR design and testing purposes.
2. Our solution, which combines our ASGA platform with digital processing hardware and firmware, provides a test solution that may be customized with relative ease compared to traditional test systems.
3. Our ASGA solution is scalable, allowing us to build test systems with multiple channels that scale well both in terms of size and costs compared to traditional systems.

We developed our ASGA solution in three phases. First, building on our microwave RADAR component expertise, we developed a microwave up-converter, a down-converter, and a power amplifier. By using identical architecture and components as in the up-converter, for the down-converter, superior Radio Frequency (“RF”) performance is achieved, including:

- phase stability and coherency,
- agile frequency switching,
- real-time commanding of Frequency, Phase, and Amplitude, and
- uniquely enabling a closed loop solution.

Second, we provided a microwave sub-system which includes individual calibrated transmit channels called the Advanced Signal Generator (ASG) and individual calibrated receive channels called the Advanced Signal Analyzer (ASA). A System Reference Module (SRM100A) shared between the ASG and ASA modules along with an industry standard AXIe chassis completes the platform. The platform’s architecture facilitates building test systems with reduced size, weight and cost compared with traditional solutions, especially when the test system is required to have multiple transmitters and receivers.

Third, we developed complete custom test solutions. Some examples of test solutions integrated by Giga-tronics are our Real-Time Threat Emulation System (TEmS) and the Multi-Ship RADAR Signal Generator sold to the US Navy at its Naval Air Station in Pt. Mugu, California.

By architecting a RADAR/EW test solution similarly to the way a RADAR system is architected, we have developed a disruptive product test platform which addresses the new adaptive/cognitive RADAR/EW test requirements.

#### **Sources and Availability of Raw Materials and Components**

Substantially all the components required by Giga-tronics to make its assemblies are available from more than one source. We occasionally use sole source arrangements to obtain leading-edge technology or favorable pricing or supply terms, but not in any material volume. In our opinion, the loss of any sole source arrangement we have would not be materially adverse to our operations. Some suppliers are also competitors of Giga-tronics. In the event a competitor-supplier chooses not to sell its products to us, production delays could occur as we seek new suppliers or re-design components to our products.

Although extended delays in receipt of components from our suppliers could result in longer product delivery schedules for us, we believe that our protection against this possibility stems from our practices of dealing with well-established suppliers and maintaining good relationships with such suppliers.

#### **Proprietary Technology and Intellectual Property**

Our competitive position is largely dependent upon our ability to provide performance specifications for our instruments and systems that (a) effectively and reliably meet customers' needs and (b) selectively surpass competitors' specifications in competing products. Patents may occasionally provide some short-term protection of proprietary designs. However, because of the rapid progress of technological development in our industry, such protection is often, although not always, short-lived. Therefore, although we occasionally pursue patent coverage, we place major emphasis on the development of new products with superior performance specifications and the upgrading of existing products toward this same end.

Our products are primarily based on our own designs, which are derived from our own engineering abilities. If our new product engineering efforts fall behind, our competitive position weakens. Conversely, effective product development greatly enhances our competitive status.

We have maintained four non-provisional patents related to our legacy 2500B parametric signal generator product line, which was not among the legacy product lines that have been sold to date. These patents describe advanced synthesis techniques and potentially can be extended for use with the Giga-tronics ASGA system and to a number of Microsource synthesizer components. Additionally, we filed a provisional U.S. patent relating to the ASGA system in June of 2016 and subsequently filed a non-provisional application in June of 2017. The patent application describes the internal design of the ASG and ASA along with the architecture of how all the components work together to facilitate building multi-channel test systems with reduced size, weight and cost as compared to present solutions. The application for the non-provisional patent is currently pending before the U.S. patent office.

We are not dependent on trademarks, licenses or franchises. We utilize certain software licenses in certain functional aspects for some of our products. Such licenses are readily available, non-exclusive and are obtained at either no cost or for a relatively small fee.

In September 2015, we entered into a software development agreement with a major aerospace and defense company whereby the aerospace company developed and licensed its simulation software to us. The simulation software (also called Open Loop Simulator or OLS technology), which is owned by the aerospace company and licensed to us, allows our ASGA system to coordinate with various third-party hardware elements to generate the signals for testing RADAR/EW equipment. We license the OLS software as a bundled or integrated solution with our TEmS product. We paid over \$1.2 million in connection with the development of this software and, in addition, we incur a license fee of over \$20,000 per system sold that incorporate this software.

## **Seasonal Nature of Business**

Our business is not seasonal.

## **Working Capital Practices**

We generally strive to maintain adequate levels of inventory and we generally sell to customers on 30-day payment terms in the U.S. and generally allow more time for overseas payments. Typically, we receive payment terms of 30 days from our suppliers. We believe that these practices are consistent with typical industry practices.

## **Importance of Limited Number of Customers**

We are a supplier of RADAR filters for fighter jet aircrafts and RADAR/EW testing solutions to various United States (U.S.) government defense agencies, as well as to their prime contractors. Management anticipates sales to U.S. government agencies and their prime contractors will remain a significant portion of all of our sale in fiscal 2020. U.S. and international defense-related agencies accounted for 98% of net sales in fiscal 2019 and 93% of net sales in fiscal 2018. Commercial business accounted for the remaining 2% of net sales in fiscal 2019 and 7% of net sales in fiscal 2018.

At the Giga-tronics Division, U.S. defense agencies and their prime contractors accounted for 90% and 10% of net sales in fiscal 2019 and 76% and 24% of net sales in fiscal 2018, respectively. Microsource reported 100% and 99% of net sales to prime contractors of U.S. defense agencies in fiscal 2019 and fiscal 2018, respectively.

During fiscal 2019, the Boeing Company accounted for 57% of our consolidated revenues and was included in the Microsource reporting segment. A second customer, Lockheed Martin accounted for 26% of our consolidated revenues during fiscal 2019 and was also included in the Microsource reporting segment.

During fiscal 2018, the Boeing Company accounted for 29% of our consolidated revenues and was included in the Microsource reporting segment. A second customer, CSRA LLC (CSRA acted as prime contractor for the United States Navy) accounted for 17% of our consolidated revenues during fiscal 2018 and was included in the Giga-tronics Division reporting segment.

We could experience a material adverse effect on our financial stability if there was a significant loss of either our defense or commercial customers.

Both Microsource and our Giga-tronics Division products are largely dependent on U.S. defense spending and budgets and are subject to expansion and contraction between fiscal year periods. Revenues from Microsource products and services often times span several years with deliveries varying between both interim and annual fiscal year periods. Additionally, the Giga-tronics Division's ASGA system is a relatively new product platform with fewer targeted customers and significantly longer sales cycles and greater average selling prices when compared to its prior general-purpose test & measurement equipment product lines. We therefore expect that a major customer in one year may not be a major customer in the following year. Accordingly, our net sales and earnings may vary significantly from one period to the next and will decline if we are unable to find new customers or increase our business with other existing customers to replace declining net sales from the previous year's major customers.

## **Backlog of Orders**

On March 30, 2019, our backlog of unfilled orders was approximately \$6.7 million compared to approximately \$11.2 million at March 31, 2018. As of March 30, 2019, there were approximately \$2.2 million of orders scheduled for shipment beyond one year, compared to \$3.8 million at March 31, 2018. Orders for our products include program orders from prime contractors with extended delivery dates. Accordingly, the backlog of orders may vary substantially from year to year and the backlog entering any single fiscal quarter may not be indicative of sales for any period. In addition, the Company now recognizes revenue for certain contracts as it incurs costs, as opposed to when units are delivered. This change in fiscal 2019 has resulted in a decrease in backlog as of March 30, 2019 as compared to the legacy method for those contracts in the prior years.

Backlog includes only those customer orders for which binding agreement exists, a delivery schedule has been agreed upon between us and our customer and, in the case of U.S. government orders, for which funding has been appropriated.

## Competition

The Company primarily competes in two different products markets: Microsource's RADAR filters and Giga-tronics RADAR/EW test systems.

Microsource is a sole source supplier serving the aftermarket for operational hardware associated with the U.S. Government's RADAR Modernization Program (RMP) for certain prior generation fighter jet aircrafts (F/A-18E, F-15D and F-16 jets) to extend their useful lives. Our Microsource division supplies RADAR filters specifically designed for military aircrafts to solve an interference problem created when newer, more powerful RADARs are installed on older aircrafts. Over the years, the prime contractors responsible for integrating the new RADARs have flight qualified our filters at considerable expense. Only a few other companies possess the technical know-how to design and manufacture filters of this nature, such as Teledyne and Micro-Lambda Wireless, but we believe the expense of developing and requalifying a new component for these aircraft is prohibitive to the point where the prime contractor would only undertake such an effort if major issues were to arise such as, significant technical deficiencies or if Microsource were unable to deliver products on time.

Microsource has received multiply supplier of the year awards including in April 2019 "The Gold Supplier" award from Boeing, so we believe our sole source position is secure.

The Giga-tronics Division serves the defense electronics market with a microwave test platform used in the evaluation of military RADAR/EW systems. These applications represent niche segments within the broader test equipment market. While the niche market segments of RADAR/EW are large enough to be meaningful to Giga-tronics, we believe they are too small to attract larger competitors, such as Agilent/Keysight, Rohde & Schwarz and National Instruments who, to our knowledge, do not approach these markets with new dedicated solutions.

We have developed a unique HWIL approach to address the RADAR/EW test requirements that are adaptive/cognitive. Testing these new RADAR and jamming (i.e. interference) signals is best solved by a real time, closed loop, dynamic simulation system. We believe our Giga-tronics RADAR/EW solutions present a paradigm shift providing a closed loop test capability that is currently unavailable elsewhere. Our competitors often have greater resources in research, development and manufacturing and substantially broader product lines and channels. To compete, we place strong emphasis on maintaining a high degree of technical competence as it relates to the development of new microwave products, are highly selective in establishing technological objectives and focus sales and marketing activities in the selected niche areas that are weakly served or underserved by our competitors. Competitors that make alternative equipment to the Giga-tronics Advanced Signal Generation and Analysis (ASGA) system include ELCOM (a division of Frequency Electronics Inc.), COMSTRON (a division of Cobham Plc) and EWST (a division of Ultra Electronics Plc). Compared to Giga-tronics, these competitors are of comparable size or have small product divisions with more limited product lines. Two larger companies, Northrop Grumman/Amherst and Textron/AAI sell open loop test equipment that competes with the Giga-tronics ASGA solutions, albeit at a much higher selling price. We do not believe that either of these suppliers are in a position to offer an adaptive closed loop testing system due to the analog nature of their systems' architectures. Compared to our ASGA system, the test systems from Northrop Grumman and Textron have long delivery schedules, represent expensive capital investments to the customers and typically are shared among a large number of users generally limiting access to their testing capabilities. Giga-tronics' ASGA solution can complement these larger test systems by addressing the new closed loop test requirements for the next generation RADAR/EW devices and by offering smaller, lower cost and more flexible testing solutions that can be delivered more quickly, which greatly increases a user's access to systems test capability and reduces the risk of program failure.

## Sales and Marketing

Microsource and the Giga-tronics Division sell their products primarily direct to U.S. defense agencies and their prime defense contractors. While the Company primarily relies on its internal sales teams to identify leads and complete sales, it may engage independent sales representatives who are perceived to have expertise with targeted markets or customers. The Company changed its sales approach and sales team in fiscal 2019 and we believe that we are beginning to see the benefits of these changes with the recent \$4.0 million purchase order for our ASGA product platform.

## Product Development

Products of the type manufactured by Giga-tronics historically have had relatively long product life cycles. However, the electronics industry is subject to rapid technological changes at the component level. Our future success is dependent on our ability to steadily incorporate new functionality and advancements in component technologies into our new products. In fiscal 2019 and fiscal 2018, product development expenses totaled approximately \$1.3 million and \$1.8 million, respectively.

Our product development activities have historically been funded internally, through product line sales, or through outside equity investment and debt financing. Product development activities are expensed as incurred.

We expect to continue to make significant investments in research and development. There can be no assurance that future technologies, processes or product developments will not render our current product offerings obsolete or that we will be able to develop and introduce new products or enhancements to existing products that satisfy customer needs in a timely manner or achieve market acceptance. Failure to do so could adversely affect our business.



## Manufacturing

The Company assembles and tests Microsource and Giga-tronics Division products at its Dublin facility. Microsource develops and manufactures RADAR filters used in fighter jet aircrafts. Our Giga-tronics Division manufactures a family of functional test products and integrates those test products along with third party hardware and software to create full test solutions for the RADAR/EW segment of the defense electronics market.

## Environment

To the best of our knowledge, we are in compliance with all Federal, state and local laws and regulations involving the protection of the environment.

## Employees

As of March 30, 2019 and March 31, 2018, we employed 39 and 43 individuals on a full-time basis, respectively. We believe that our future success depends on our ability to attract and retain skilled personnel. None of our employees are represented by a labor union, and we consider our employee relations to be good.

## Information about Foreign Operations

We sell to our international customers through a network of foreign technical sales representative organizations. All transactions between us and our international customers are in U.S. dollars.

## Geographic Distribution of Net Sales

(Dollars in thousands)

	Fiscal 2019	Fiscal 2018	Fiscal 2019	Fiscal 2018
Domestic	\$ 11,054	9,058	99%	92%
International	94	742	1%	8%
Total	\$ 11,148	\$ 9,800	100%	100%

See Part II-Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements, Note 10, Significant Customers and Industry Segment Information for further breakdown of international sales for the last two fiscal years.

## ITEM 1A. RISK FACTORS

*If we do not generate sufficient net cash flow from our operations and if we are unable to raise additional capital as needed, our financial condition would be adversely affected, we may not be able to execute our growth strategy and we could become insolvent*

We cannot assure that we will generate cash from operations or other potential sources to fund our future working capital needs.

We incurred net losses of \$1.0 million in fiscal 2019, and \$3.1 million in fiscal 2018. These losses have contributed to an accumulated deficit of \$28.5 million as of March 31, 2019. Beginning in fiscal 2012, we invested primarily in the development of our ASGA product platform for EW test and emulation applications, which we believe possesses greater long-term opportunities for revenue growth and improved gross margins compared to our previous general-purpose test and measurement product lines, the substantial majority of which have been sold as of March 31, 2018. Through March 31, 2019, the Company has spent approximately \$20 million towards the development of the ASGA system product platform. Although we have shipped ASGA system products to several customers, potential delays in the refinement of further features, longer than anticipated sales cycles, or the ability to generate shipments in significant quantities, could significantly contribute to additional future losses.

The lack of adequate working capital from any inability to generate cash flow from operations or to raise equity or debt financing could force us to discontinue or suspend product lines, business segments or otherwise substantially curtail or cease operations and would, therefore, have an adverse effect on our business and financial condition. Furthermore, we cannot assure that any necessary financing, if available, would be available on attractive terms or that they would not have a significantly dilutive effect on our existing shareholders. If our financial condition were to worsen and we become unable to attract additional equity or debt financing or enter into other strategic transactions, we could become insolvent or be forced to declare bankruptcy, and we would not be able to execute our growth strategy.

***Our recent losses and limited liquidity during most of Fiscal 2019 and prior fiscal years caused us to reduce product development expenditures and headcount***

Our recent losses and limited liquidity caused us to reduce our R&D expenditures and headcount in fiscal 2019 and prior years. This prolonged reduction of R&D spending caused us to delay the development of certain features of our ASGA product platform. As a result of the Company's improved operating performance in fiscal 2019, due in part to the receipt of a \$4.0 million ASGA product order in February 2019, the receipt of \$2.5 million in gross proceeds from the sale of 6.0% Series E Senior Convertible Voting Perpetual Preferred Stock ("Series E Shares") between March 2018 and March 2019, and a projected increase in ASGA product sales in fiscal 2020, the Company anticipates hiring additional R&D personnel and incurring additional R&D expenditures during fiscal 2020 compared to fiscal 2019. Any delays in the receipt of future orders for our ASGA or other products would adversely impact our quarterly operating results during the second half of calendar 2020 and subsequent periods.

***We face risks related to production delays, delays of customer orders and higher selling price of a new product platform.***

Our ASGA product platform has been our primary product development focus during the past seven years, however, delays in completing its development, together with early design and manufacturing issues and longer than anticipated sales cycles have contributed to our losses and increased accumulated deficit as of March 30, 2019. Additionally, the average selling price of our new ASGA products is considerably higher than our prior general-purpose test and measurement products, which in turn, requires additional internal approvals on the part of the purchaser and generally leads to longer sales cycles. Our financial condition may also cause potential customers to delay, postpone or decide against placing orders for our products. Continued longer than anticipated sales cycles in future fiscal years, or delays in production and shipping volume quantities, could significantly contribute to additional losses.

***Our sales are substantially dependent on the defense industry and a limited number of customers.***

All of our current product and service offerings are directed towards the defense marketplace which has a limited number of customers. If the defense market demand decreases, actual shipments could be less than projected shipments with a resulting decline in sales. Additionally, the loss of any one customer may have a material adverse effect on future operating results and financial condition. Our product backlog also has a number of risks and uncertainties such as the cancellation or deferral of orders, dispute over performance of our products and our ability to collect amounts due under these orders. If any of these events occur, actual shipments could be lower than projected shipments and revenues could decline which would have an adverse effect on our operating results and liquidity.

***Our markets involve rapidly changing technology and standards.***

The market for electronics equipment is characterized by rapidly changing technology and evolving industry standards. We believe that our future success will depend in part upon our ability to develop and commercialize our existing products, and in part, on our ability to develop, manufacture and successfully introduce new products and product lines with improved capabilities, and to continue to enhance existing products. There can be no assurance that we will successfully complete the development of current or future products, or that such products will achieve market acceptance. The inability to develop new products in a timely manner could have a material adverse impact on our operating performance and liquidity.

***Performance problems in our products or problems arising from the use of our products together with other vendors' products may harm our business and reputation.***

Products as complex as those we produce may contain unknown and undetected defects or performance problems. For example, it is possible that a product might not comply with stipulated specifications under all circumstances. In addition, our customers generally use our products together with their own products and products from other vendors. As a result, when problems occur in a combined equipment environment, it may be difficult to identify the source of the problem. A defect or performance problem could result in lost revenues, increased warranty costs, diversion of engineering and management time and effort, impaired customer relationships and injury to our reputation generally. To date, performance problems in our products or in other products used together with our products have not had a material adverse effect on our business. However, management cannot be certain that a material adverse impact will not occur in the future.

***Our Advanced Signal Generation and Analysis system product platform is complex and could have unknown defects or errors, which may increase our costs, harm our reputation with customers, give rise to costly litigation, or divert our resources from other purposes.***

Our ASGA system products are extremely complex. Despite testing, our initial products contained defects and errors and may in the future contain defects, errors, or performance problems following its sale or when new versions or enhancements are released, or even after these products have been used by our customers for a period of time. These problems could result in expensive and time-consuming design modifications or warranty charges, delays in the introduction of new products or enhancements, significant increases in our service and maintenance costs, diversion of our personnel's attention from our product development efforts, exposure to liability for damages, damaged customer relationships, and harm to our reputation, any of which could have a material adverse impact on our results of operations. In addition, increased development and warranty costs could be substantial and could reduce our operating margins.

***Our products contain components produced by suppliers which may be discontinued or no longer available in future periods which could lead to production delays and adversely impact our operating results and financial condition.***

Certain components produced by our suppliers may be discontinued or no longer available to us to produce our products. Such discontinuations would require us to seek replacement components that may take longer than expected to procure and lead to delays in product sales. To date, procurement of replacement products has not had a significant adverse impact on our operating results, however, such occurrences in the future may adversely impact our business operations and financial condition.

***If we fail to maintain satisfactory compliance with quality certifications and classified processing and control standards, product deliveries may be delayed or cancelled which would adversely impact our business, operating result and financial condition.***

Certain of our customer contracts require that we maintain quality certifications and classified processing and control standards. If we were unable to maintain such certifications and standards, our product shipments may be delayed or cancelled which would cause us to lose business or brand reputation, resulting in a material adverse effect on our business operating results and financial condition.

***Our operating results may fluctuate from quarter to quarter, making it difficult to predict future performance***

Our revenue, expenses and operating results have fluctuated, and may in the future continue to fluctuate significantly from quarter to quarter due to a number of factors. Factors that may contribute to these fluctuations include our dependence on the defense industry and a limited number of customers, the nature and length of our sales cycles for our products and services, the duration and delivery schedules within our customer contracts, our ability to timely develop and produce our products, as well as other factors described elsewhere in this Form 10-K.

***There is a limited trading market for our common stock.***

Although our common stock trades on the OTCQB Market, the trading volumes are generally low. As a result, there is limited liquidity for our common stock and it could be more difficult for investors to purchase or sell shares of our common stock compared to other publicly traded companies. In addition, because of the limited volume of trading in our common stock, a sale of a significant number of shares of our common stock in the open market could cause our stock price to decline significantly.

***Our common stock price is volatile***

The market price of our common stock could be subject to significant fluctuations in response to variations in quarterly operating results, receipt or cancellation of significant orders, reduction in revenues or lower earnings or increased losses and reduced levels of liquidity when compared to previous quarterly periods, and other factors such as announcements of technological innovations or new products by us or by our competitors, government regulations or developments in patent or other proprietary rights. In addition, the OTCQB Market and other stock markets have experienced significant price fluctuations in recent years. Some of these fluctuations often have been unrelated to the reported operating performance of the specific companies whose stocks are traded. Broad market fluctuations, as well as general foreign and domestic economic conditions, may adversely affect the market price of our common stock.

***We may issue additional shares of common or preferred stock in the future, which could dilute a shareholder's ownership of common stock***

Our articles of incorporation authorize our board of directors, generally without shareholder approval, to, among other things, issue additional shares of common or preferred stock. The issuance of any additional shares of common or preferred stock could be dilutive to a shareholder's ownership of our common stock. The issuance of preferred stock could impair the voting, dividend and liquidation rights of common shareholders without their approval. To the extent that we issue options or warrants to purchase common stock in the future and the options or warrants are exercised, our shareholders may experience further dilution. Holders of shares of our common stock have no preemptive rights that entitle holders to purchase their pro rata share of any offering of shares of any class or series and, therefore, shareholders may not be permitted to invest in future issuances of our common or preferred stock.

***We have a significant number of outstanding warrants, options and shares of convertible preferred stock, which may cause significant dilution to our shareholders, adversely impact the market price of our common stock and make it more difficult for us to raise funds through future equity offerings.***

As of March 30, 2019, we had 11,360,511 shares of common stock outstanding. In addition, as of that date we had outstanding warrants to acquire 3,452,000 shares of common stock, options to acquire 2,735,000 shares of common stock and shares of convertible preferred stock convertible into an aggregate of 11,213,000 shares of common stock. The issuance of shares of common stock upon the exercise of warrants or options or conversion of preferred stock would dilute the percentage ownership interest of all holders of our common stock, might dilute the book value per share of our common stock and would increase the number of our publicly traded shares, which could depress the market price of our common stock.

The fact that our shareholders, warrant holders and option holders can sell substantial amounts of our common stock in the public market, whether or not sales have occurred or are occurring, could make it more difficult for us to raise additional funds through the sale of equity or equity-related securities in the future at a time and price that we deem reasonable or appropriate, or at all.

***Holders of our outstanding preferred stock have rights that are preferential to and may conflict with the rights and interests of holders of our common stock.***

As of March 30, 2019, we had 116,934 shares of convertible preferred stock outstanding with aggregate liquidation preferences of \$7.2 million. In addition, we must obtain the approval of the holders of our Series E Shares to complete certain types of transactions. For example, the Certificate of Determination for our Series E Shares prohibits us from issuing any shares having preferences that are superior to or on parity with our Series E Shares and the Investor Rights Agreement with the holders of our Series E Shares require that we obtain the approval of holders representing 66.6% of the Series E Shares to incur any additional indebtedness, other than commercial bank debt or trade debt.

These preferences and restrictions could make it more difficult to raise capital through sales of common stock, a new series of preferred stock or debt without the approval of the holders of our Series E Shares or other preferred shares, who interests may be different than those of our other shareholders who are not entitled to similar preferences or approval rights.

***Our competition has greater resources.***

Several of our competitors including, among others, Agilent/Keysight, Rohde & Schwarz and National Instruments have substantially greater research and development, manufacturing, marketing, financial, and technological personnel and managerial resources than us. These resources also make these competitors better able to withstand difficult market conditions than us. There can be no assurance that any products developed by the competitors will not gain greater market acceptance than any developed by us.

***We may incur substantial costs enforcing our intellectual property rights or defending against third-party claims as a result of litigation or other proceedings***

In connection with the potential enforcement of our own intellectual property rights or disputes related to the validity or alleged infringement of third-party intellectual property rights, including patent rights, we may in the future be subject to claims, negotiations or complex, protracted litigation. Intellectual property disputes and litigation may be costly and can be disruptive to our business operations by diverting attention and energies of management and key technical personnel, and by increasing our costs of doing business. Additionally, we may not prevail in any future litigation and disputes, which could adversely affect our results of operations and financial condition.

***We are dependent on our management team and development and operations personnel, and the loss of one or more key employees or groups could harm our business and prevent us from implementing our business plan in a timely manner.***

Our success depends substantially upon the continued services of our executive officers and other key members of management. From time to time, there may be changes in our executive management team resulting from the hiring or departure of executives. Such changes in our executive management team may be disruptive to our business. We are also substantially dependent on the continued service of our existing development and operations personnel because of the complexity of our service and technologies. Staffing due to the loss of one or more of our key employees or groups can be expensive, divert our attention from executing our business plan and could seriously harm our business. Furthermore, possible shortages of key personnel, including engineers, in the area surrounding our facilities could require us to pay more to hire and retain key personnel, thereby increasing our costs.

***If we experience a significant cybersecurity attack or disruption in our IT systems, our business, reputation, and operating results could be adversely affected.***

We rely on an internal IT system monitored by certain internal employees and third-party service providers to maintain our IT systems; maintain financial records; retain sensitive data, such as intellectual property, proprietary business information, and data related to customers, and suppliers; process orders; manage inventory; process shipments to customers; and operate other critical functions. The ongoing maintenance and security of this information is critical to the classified processing and control standards that our suppliers require us to maintain and the success of our business operations and our strategic goals.

Despite our implementation of network security measures, our network may be vulnerable to cybersecurity attacks, computer viruses, break-ins and similar disruptions. Our network security measures include, but are not limited to, the implementation of firewalls, antivirus protection, patches, log monitors, routine backups, offsite storage, network audits, and routine updates and modifications. Despite our efforts to create these security barriers, we may not be able to keep pace as new threats emerge and it is virtually impossible for us to entirely eliminate this risk. Cybersecurity attacks are evolving and include, but are not limited to, malicious software, attempts to gain unauthorized access to data, and other electronic security breaches that could lead to disruptions in systems, unauthorized release of confidential or otherwise protected information and corruption of data. Any such event could have a material adverse effect on our business, reputation, operating results and financial condition, and no assurance can be given that our efforts to reduce the risk of such attacks will be successful.

In addition, our IT systems may be susceptible to damage, disruptions or shutdowns due to power outages, hardware failures, telecommunication failures, user errors, catastrophes or other unforeseen events. Such events could result in the disruption of business processes, network degradation and system downtime, along with the potential that a third party will exploit our critical assets such as intellectual property, proprietary business information and data related to our customers, suppliers and business partners. To the extent that such disruptions occur, our customers and suppliers may lose confidence in our solutions and we may lose business or brand reputation, resulting in a material and adverse effect on our business operating results and financial condition.

***Business interruptions could delay or prevent our business activities, which could have a material adverse effect on our business, financial condition and results of operations.***

Our primary facility and headquarters is located in the San Francisco Bay Area near known earthquake fault zones and is vulnerable to significant damage from earthquakes. We are also vulnerable to other natural disasters and other events that could disrupt our operations that may be beyond our control. We do not carry insurance for earthquakes and we may not carry sufficient business interruption insurance to compensate us for losses that may occur. Any losses or damages we incur could have a material adverse effect on our operating results, cash flows, and success as an overall business.

## ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

## ITEM 2. PROPERTIES

Our principal executive offices along with our marketing, sales, and engineering offices and manufacturing facilities are located in a 23,873 square foot facility in Dublin, California, which we leased on January 5, 2017 and began occupying in April 2017 under a lease agreement which expires in March 2023. We previously occupied a 47,300 square foot facility in nearby San Ramon, California under a lease agreement which expired on April 30, 2017.

We added a second engineering office located in a 1,200 square foot facility in Nashua, New Hampshire, which we leased on February 1, 2019 under a lease agreement which expires on January 31, 2022.

We believe that our Dublin and New Hampshire facilities are adequate for our business activities.

## ITEM 3. LEGAL PROCEEDINGS

As of March 30, 2019, the Company had no material pending legal proceedings.

## ITEM 4. MINE SAFETY DISCLOSURES

Not applicable

## PART II

### ITEM 5. MARKET FOR COMMON EQUITY, RELATED SHAREHOLDER MATTERS AND ISSUER REPURCHASES OF EQUITY SECURITIES

#### Common Stock Market Prices

Our common stock is traded on the OTCQB market using the symbol "GIGA". The number of record holders of our common stock as of March 30, 2019 was approximately 114. A significantly larger number of shareholders may be "street name" or beneficial holders, whose shares of record are held by banks, brokers and other financial institutions. The table below shows the high and low closing bid quotations for the common stock during the indicated fiscal periods. These quotations reflect inter-dealer prices without mark-ups, mark-downs, or commission and may not reflect actual transactions.

	Fiscal Quarter			Fiscal Quarter		
	2019	High	Low	2018	High	Low
First Quarter	(4/01 - 6/30)	\$ 0.35	\$ 0.23	(3/26 - 6/24)	\$ 0.90	\$ 0.73
Second Quarter	(7/01 - 9/29)	0.46	0.30	(6/25 - 9/30)	0.89	0.58
Third Quarter	(9/30 - 12/29)	0.35	0.23	(10/01 - 12/30)	0.85	0.37
Fourth Quarter	(12/30 - 3/30)	0.45	0.24	(12/31 - 3/31)	0.42	0.26

We have not paid cash dividends on our common stock in the past and have no current plans to do so in the future, believing our available capital is best used to fund our operations, including product development and enhancements. In addition, in the absence of positive retained earnings, California law permits payment of cash dividends on our common stock only to the extent total assets exceed the sum of total liabilities and the liquidation preference amounts of preferred securities. At March 30, 2019, the Company's assets were less than this sum by \$5.4 million. Our shares of Series E preferred stock provide for semi-annual 6% cumulative cash dividends based on the original purchase price of \$25.00 per share, however we may exercise our right to pay any such dividends in shares of our common stock instead of cash.

## Equity Compensation Plan Information

The following table provides information on options and other equity rights outstanding and available under the Company equity compensation plans at March 30, 2019.

### Equity Compensation Plan Information

Plan Category	No. of securities to be issued upon exercise of outstanding options (a)	Weighted average exercise price of outstanding options (b)	No. of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders (1)	2,334,700	\$ 0.42	1,686,000
Equity compensation plans not approved by security holders (2)	400,000	0.33	-
Total	2,734,700	\$ 0.41	1,686,000

- (1) Does not include warrants issued to purchasers of units consisting of stock and warrants in private placements or to lenders in connection with debt financing. Includes nonqualified options for 299,750 shares repriced from \$1.64, \$1.42 and \$1.65 per share to \$0.33 per share, the closing market price on the effective date. Does not include warrants to purchase 287,750 shares of common stock at the price of \$0.25 per share issued to a placement agent for services in connection with a private placement.
- (2) Reflects a special grant of nonqualified options for 400,000 shares of common stock in consideration of employment of an employee and officer. The exercise price is \$0.33 per share and the vesting schedule is also 25% after one year and 1/48th of the original grant each month thereafter.

### Issuer Repurchases

We did not repurchase any of our equity securities during the fiscal year ended March 30, 2019.

### Recent Sales of Unregistered Securities

On September 21, 2018, the Company issued and sold 1,260 additional Series E Shares to approximately three accredited investors in a private placement pursuant to a Securities Purchase Agreement. The purchase price for each Series E Share was \$25.00, resulting in total gross proceeds of \$31,500. Emerging Growth Equities, Ltd. served as the Company's exclusive placement agent in connection with the private placement. Fees payable to Emerging Growth Equities, Ltd. at completion of the transaction were 2.5% of gross proceeds, plus warrants to purchase 2.5% of the number of common shares into which the Series E shares can be converted (100 common shares) at an exercise price of \$0.25 per share, or 126,000 shares of common stock.

On September 28, 2018, the Company issued and sold 400 additional Series E Shares to one accredited investor in a private placement pursuant to a Securities Purchase Agreement. The purchase price for each Series E Share was \$25.00, resulting in total gross proceeds of \$10,000. Emerging Growth Equities, Ltd. served as the Company's exclusive placement agent in connection with the private placement. Fees payable to Emerging Growth Equities, Ltd. at completion of the transaction were 2.5% of gross proceeds, plus warrants to purchase 2.5% of the number of common shares into which the Series E shares can be converted (100 common shares) at an exercise price of \$0.25 per share, or 40,000 shares of common stock.

During the six-month period beginning September 30, 2018 and ending March 30, 2019, the Company sold an aggregate of 30,000 additional Series E Shares in a private placement to nine accredited investors at the price of \$25.00 per share for gross proceeds of \$750,000. Each Series E share is convertible into shares of common stock at a price of \$0.25 per share (i.e., 100 shares of common stock per share of Series E) at the option of the holder. Emerging Growth Equities, Ltd. served as the Company's exclusive placement agent in connection with the private placement. Fees payable to Emerging Growth Equities, Ltd. at completion of the transactions were 5% of gross proceeds. The following table provides additional information about these sales.

Date	Number of Series E Shares Sold	Gross Proceeds	Placement Agent Compensation Fees	Warrants to Purchase Common Stock
November 21, 2018	2,000	\$ 50,000	\$ 2,500	200,000
November 30, 2018	5,400	\$ 135,000	\$ 6,750	540,000
December 7, 2018	1,400	\$ 35,000	\$ 1,750	140,000
December 28, 2018	1,600	\$ 40,000	\$ 2,000	160,000
January 23, 2019	600	\$ 15,000	\$ 750	60,000
February 7, 2019	7,400	\$ 185,000	\$ 9,250	740,000
February 8, 2019	2,000	\$ 50,000	\$ 2,500	200,000
March 6, 2019	9,600	\$ 240,000	\$ 12,000	960,000

The Company issued the foregoing securities in reliance on the exemption from registration under Section 4(2) of the Securities Act of 1933 based on the fact that the sales were made to a limited number of accredited investors in a private placement. The Company expects to use the proceeds for working capital and general corporate purposes.

#### ITEM 6. SELECTED FINANCIAL DATA

Pursuant to Item 301(c) of Regulation S-K, the Company, as a smaller reporting company, is not required to provide the information required by this item.



## ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITIONS AND RESULTS OF OPERATIONS

### Overview and Refocusing of Giga-tronics

We manufacture specialized electronics equipment for use in both military test and airborne operational applications. Our operations consist of two business segments, those of our wholly-owned subsidiary, Microsource, and those of our Giga-tronics Division.

- Microsource's primary business is the design of custom Microwave Integrated Components ("MIC") as well as the production of MIC components using chip and wire assembly methods. Our Microsource Division offers a line of tunable, synthesized Band Reject Filters (BRF) for solving interference problems in RADAR/EW applications. Self-protection systems onboard high performance military aircraft often require RADAR filters to block electromagnetic interference generated by other onboard electronic systems, particularly the aircraft's main RADAR. Microsource's high-speed, tunable notch filters can quickly block interference from both continuous wave and wide bandwidth emissions. Using proprietary driver and phase lock technology, these filters offer tuning speeds that are up to ten times faster than traditional filter designs. We design these filters specifically for each application. Microsource customers are primarily prime contractors for whom we develop and manufacture aftermarket RADAR filters used in military fighter jet aircraft.
- The Giga-tronics Division designs, manufactures and markets a family of functional test products for the RADAR and Electronic Warfare (RADAR/EW) segment of the defense electronics market. Our RADAR/EW test products are used to evaluate and improve the performance of RADAR/EW systems. Giga-tronics Division customers include major prime defense contractors, the armed services (primarily in the U.S.) and research institutes. The Company believes its newer RADAR/EW test products represent a greater long-term opportunity for sales growth and improved gross margins compared to its legacy test and measurement equipment product lines, the majority of which have been divested in recent years.

Microsource's revenues have grown as prime contractors began upgrading additional aircraft. Initially Microsource supplied filters for one fighter jet, the F/A-18E. During our 2014 fiscal year, the prime contractor added a second aircraft, the F-15. Additionally, during our 2017 fiscal year, a second prime contractor added a third aircraft, the F-16. As a result, Microsource's revenue has climbed to over \$9.0 million during our 2019 fiscal year, which ended March 30, 2019. Microsource is a sole-source supplier of filters for the three fighter jets and we expect that the business will continue to be a significant source of our future revenue.

The Company believes that customer spending for EW systems, including test and emulation, will grow in future years due to more complex RADAR signals and foreign investment in new technology, which will require customers to have greater access to more sophisticated test and emulation equipment.

The Company believes it can become a leading supplier of solutions for evaluating RADAR and EW systems due to the investment the Company has made since 2012 in its ASGA functional test platform. The same digital technology that has revolutionized commercial communications and automotive electronics is now being applied to advanced RADAR and EW systems. This shift in technology limits the effectiveness of currently available test solutions due to the inability of these solutions to properly stimulate and actively interact with the RADAR and EW systems being tested. The Giga-tronics ASGA platform, however, does have the needed sophisticated control and real-time behavior built into the fabric of its architecture. This architecture allows for delivering test solutions with real time responses and closed loop behavior not available from any competitor.

## Significant Orders

Both Microsource and the Giga-tronics Division have historically received large customer orders periodically. The timing of orders is sporadic and difficult to predict, and any achievement of associated milestones, can cause significant differences in orders received, backlog, sales, deferred revenue, inventory and cash flow when comparing one fiscal period to another. Below is a review of recently received significant orders:

### Microsource

In fiscal 2015, Microsource received a \$6.5 million order for non-recurring engineering (“NRE”) services and for delivery of a limited number of flight-qualified prototype hardware from a prime defense contractor to develop a variant of our high performance, fast tuning YIG RADAR filters for a fighter jet aircraft platform. In fiscal 2016 our Microsource business unit finalized an associated multiyear \$10.0 million YIG production order (“YIG Production Order”). The Company started shipping the YIG Production Order in the second quarter of fiscal 2017 and anticipates shipping the remainder through fiscal 2020.

In July 2016, Microsource received a \$1.9 million non-recurring engineering services order associated with redesigning a component of its high performance YIG filter used on a fighter jet aircraft platform. Of this NRE service order, we delivered services of approximately \$884,000 and \$816,000 in fiscal years 2017 and 2018, respectively, and completed delivery of the remaining services during fiscal 2019.

In September 2017, Microsource received a \$4.8 million order for continuing the YIG RADAR filter for a fighter jet platform. The Company began initial shipments of these filters in the fourth quarter of fiscal 2018 and recognized revenue on the majority of the order in fiscal 2019.

In February 2018, Microsource received a \$1.6 million YIG RADAR filter order from one of our customers. The Company recognized \$1.1 million of revenue in fiscal 2019 and expects to recognize the remainder of revenue in fiscal 2020.

In November 2018, Microsource received a \$4.5 million YIG RADAR filter order from one of our customers. The Company recognized \$1.1 million of revenue in fiscal 2019 and expects to recognize the majority of the remaining revenue in fiscal year 2020.

### Giga-tronics Division

In February 2019, the Giga-tronics Division received a \$4.0 million order from the United States Navy for our Real-Time Threat Emulation System (TEmS) which is a combination of the Advanced Signal Generator Hardware platform, along with software developed and licensed to the Company from a major aerospace and defense company. The order is comprised of two TEmS units of equal value along with approximately \$671,000 of engineering services to support and upgrade currently installed systems. The Company fulfilled the first TEmS unit order in the March 2019 quarter, the Company’s fourth quarter of fiscal 2019. The second TEmS unit order was fulfilled during the June 2019 quarter, the Company’s first quarter of fiscal 2020. The engineering services are expected to occur during the next twelve months.

## Results of Operations

New orders by reporting segment are as follows for the fiscal years ended:

New Orders	% change				
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
<b>(Dollars in thousands)</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>		
ASGA Products	\$ 3,935	\$ 1,813	\$ 4,803	117%	(62)%
Legacy Products	165	238	2,724	(31)%	(91)%
Giga-tronics Division	\$ 4,100	\$ 2,051	\$ 7,527	100%	(73)%
Microsource	5,327	7,550	7,567	(29)%	(0.2)%
Total	\$ 9,427	\$ 9,601	\$ 15,094	(2)%	(36)%

Total new orders received in fiscal 2019 were \$9.4 million which was consistent with the \$9.6 million received in fiscal 2018. Although the new orders were consistent year over year, the product mix of new orders of higher Giga-tronics Division product orders (\$2.0 million or 99%) was due mainly to the Company’s recent receipt in February 2019 of its \$4.0 million ASGA product order from the U.S. Navy. The Microsource business unit saw a \$2.2 million or 29% decrease in fiscal 2019 primarily due to the impact of the timing of large, multi-year RADAR filter production orders. The timing of receipt of expected large RADAR filter contracts varies from period to period.

Total new orders received in fiscal 2018 were \$9.6 million which was \$5.5 million or 36% lower than the \$15.1 million received in fiscal 2017. The decrease was primarily the result of lower Giga-tronics Division product orders (\$5.5 million or 73%) due mainly to the Company’s recent divestures of legacy test and measurement product lines and a decrease in ASGA product orders of \$3.0 million due to a longer than anticipated sales cycle.

The following table shows order backlog and related information at fiscal year-end:

				% change	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
(Dollars in thousands)					
ASGA Products	\$ 2,195	\$ 20	\$ 562	10875%	(96)%
Legacy Products	47	57	201	(18)%	(72)%
Giga-tronics Division	2,242	77	763	2811%	(90)%
Microsource	4,446	11,088	10,601	(60)%	4.6%
Backlog of unfilled orders	\$ 6,688	\$ 11,165	\$ 11,364	(40)%	(1.8)%
ASGA Products	2,195	20	562	10875%	(96)%
Legacy Products	47	57	201	(18)%	(72)%
Giga-tronics Division	2,242	77	763	2811%	(90)%
Microsource	2,239	7,342	4,917	(70)%	49%
Backlog of unfilled orders shippable within one year	\$ 4,481	\$ 7,419	\$ 5,680	(40)%	31%
ASGA Products	—	—	—	—	—
Legacy Products	—	—	—	—	—
Giga-tronics Division	—	—	—	—	—
Microsource	2,207	3,746	5,684	(41)%	(34)%
Backlog of unfilled orders shippable after one year	\$ 2,207	\$ 3,746	\$ 5,684	(41)%	(34)%

Backlog at the end of fiscal 2019 versus the prior year decreased by 40% primarily due to the impact of the adoption of ASC 606 on April 1, 2018. The Giga-tronics ASGA backlog at March 30, 2019 compared to March 31, 2018 increased \$2.2 million primarily due to a large U.S. Navy order received in fiscal 2019.

Backlog at the end of fiscal 2018 decreased by \$199,000 or 1.8% compared to the end of fiscal 2017. The decrease in backlog was primarily due to a longer than anticipated sales cycle for ASGA products for the Giga-tronics Division offset by an increase in RADAR filter products for Microsource.

The allocation of net sales by reporting segment was as follows for the fiscal years shown:

				% change	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
(Dollars in thousands)					
ASGA Sales	\$ 1,760	\$ 2,205	\$ 5,286	(20)%	(58)%
Legacy Product Sales	175	532	2,735	(67)%	(81)%
Giga-tronics Division	\$ 1,935	\$ 2,737	\$ 8,021	(29)%	(66)%
Microsource	9,213	7,063	8,246	30%	(14)%
Total	\$ 11,148	\$ 9,800	\$ 16,267	14%	(40)%

Net sales for the fiscal year ended March 30, 2019 were \$11.1 million, an increase of 14%, compared to \$9.8 million for the fiscal year ended March 31, 2018. The majority of the sales increase in fiscal 2019 was attributable to Microsource which was higher by \$2.2 million or 30% partially offset by a \$445,000 or 20% decrease in ASGA sales, and a \$357,000 or 67% decrease in legacy product sales due to the Company's recent legacy product line divestitures. The increase in net sales for Microsource was primarily due to higher RADAR filters product including the impact of the adoption of ASC 606, which was significantly offset by the lower sales of our Giga-tronics Division sales compared to the prior year. Effective April 1, 2018, the Company adopted the required Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers*, as amended (commonly referred to as ASC 606), which changed the way the Company recognizes revenue for certain contracts.

Net sales for the fiscal year ended March 31, 2018 were \$9.8 million, a decrease of 40%, compared to \$16.3 million for the fiscal year ended March 25, 2017. The majority of the sales decrease in fiscal 2018 was attributable to the Giga-tronics Division which was lower by \$5.3 million or 66% primarily due to a \$3.1 million or 58% decrease in ASGA product sales due to longer than anticipated sales cycles and, in part, by the Company's reduced focus on selling complete EW test solutions in fiscal 2018, and a \$2.2 million or 81% decrease in legacy product sales due to the Company's recent legacy product line divestitures. Microsource sales decreased in fiscal 2018 by \$1.2 million or 14% compared to fiscal 2017 due to lower scheduled RADAR filter shipments in fiscal 2018 and the completion of certain related nonrecurring engineering (NRE) services in fiscal 2017.

The allocation of gross profit by reporting segment was as follows for the fiscal years shown:

<b>Gross Profit</b>				% change	
				<b>2019</b>	<b>2018</b>
(Dollars in thousands)	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>vs.</b>	<b>vs.</b>
				<b>2018</b>	<b>2017</b>
Giga-tronics Division	\$ 1,097	\$ (12)	\$ 1,512	9242%	(101)%
Microsource	3,626	2,748	3,039	32%	(10)%
<b>Total</b>	<b>\$ 4,723</b>	<b>\$ 2,736</b>	<b>\$ 4,551</b>	<b>73%</b>	<b>(40)%</b>

Gross profit increased in fiscal 2019 to \$4.7 million from \$2.7 million for fiscal 2018. The higher gross profit was primarily due to a decrease in cost of sales of 9% and an increase in sales of 14%.

Overall gross profit decreased in fiscal 2018 to \$2.7 million from \$4.6 million for fiscal 2017. Gross profit in fiscal 2018 was negatively impacted by the higher cost of ASGA product line sales in fiscal 2018 compared to fiscal 2017 due to the costs related to rework, and refinement of features, the adverse impact of fixed manufacturing overhead upon lower production volume in fiscal 2018 and the increase in non-cash charges associated with the impact of a change in estimate of capitalized software development costs and amortizing the remaining cost thereof during fiscal 2018.

Operating expenses were as follows for the fiscal years shown:

<b>Operating Expenses</b>				% change	
				<b>2019</b>	<b>2018</b>
(Dollars in thousands)	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>vs.</b>	<b>vs.</b>
				<b>2018</b>	<b>2017</b>
Engineering	\$ 1,304	\$ 1,794	\$ 2,254	(27)%	(20)%
Selling, general and administrative	3,707	4,076	4,641	(9)%	(12)%
<b>Total</b>	<b>\$ 5,011</b>	<b>\$ 5,870</b>	<b>\$ 6,895</b>	<b>(15)%</b>	<b>(15)%</b>

Operating expenses decreased 15% or \$859,000 in fiscal 2019 compared to fiscal 2018. Engineering expenses decreased \$490,000 during fiscal 2019 when compared to fiscal 2018 primarily due to a decrease in personnel related expenses due to lower headcount. Selling, general and administrative expenses decreased 9% or \$369,000 primarily due to a decrease in headcount and personnel related expenses, and a decrease in bonuses and commissions.

Operating expenses decreased 15% or \$1.0 million in fiscal 2018 compared to fiscal 2017. Engineering expenses decreased \$460,000 during fiscal 2018 when compared to fiscal 2017 primarily due to a decrease in personnel related expenses due to lower headcount. Engineering expenses were also lower in fiscal 2018 due to certain engineers having been assigned to a Microsource nonrecurring engineering project that is recorded as cost of sales. Selling, general and administrative expenses decreased 12% or \$565,000 primarily due to a decrease in headcount and personnel related expenses, a decrease in outside services related to management consulting, a decrease in bonuses and commissions as a result of the sale of the legacy products to Astronics and Spanaweave, and lower lease and facilities costs as a result of the Company's relocation to a smaller facility in Dublin, California during May 2017.

Our recent losses and limited liquidity caused us to reduce our R&D expenditures and headcount in fiscal 2019 and prior years. With the Company's improved operating performance in fiscal 2019 and a projected increase in ASGA product sales in fiscal 2020, the Company anticipates hiring additional R&D personnel and incurring additional R&D expenditures during fiscal 2020 compared to fiscal 2019.

#### **Net Interest Expense**

Net interest expense in fiscal 2019 was \$713,000 an increase of \$252,000 over fiscal 2018. Interest expense increased primarily due to the loan modification with PFG effective March 26, 2018, as well as additional interest accrued as a result of the Company's issuance of Series E Shares in March of 2018 and throughout fiscal 2019. For fiscal 2019, interest expense includes \$223,000 of accretion of discounts on the PFG loan compared to \$127,000 recorded in fiscal 2018.

Net interest expense in fiscal 2018 was \$461,000 an increase of \$328,000 over fiscal 2017. The increased net interest expense in fiscal 2018 was primarily due to the additional interest as a result of non-compliance with certain covenants on the PFG loan and higher loan balances in fiscal 2018.

## Net Loss

Net loss was \$1.0 million in fiscal 2019, compared to a net loss of \$3.1 million in fiscal 2018. The decrease in net loss for fiscal 2019 was primarily due to significantly improved gross margins of 42% in fiscal 2019 compared to 28% in fiscal 2018 due to the change in revenue mix described above (including the impact of the adoption of ASC 606) as well as a decrease in operating expenses of 15% or \$859,000 in fiscal 2019 over fiscal 2018. Engineering expenses decreased primarily due to a decrease in personnel related expenses due to lower headcount. Selling, general and administrative expenses decreased primarily due a decrease in headcount and personnel related expenses as well as a decrease in bonuses and commissions.

Net loss was \$3.1 million in fiscal 2018, compared to a net loss of \$1.5 million in fiscal 2017. The higher net loss recorded in fiscal 2018 was primarily due to decreased revenues as well as increases in cost of sales due to the impact of the change in estimate related to capitalized software development costs and interest expense discussed above. Net loss was also higher due to an \$802,000 gain associated with the sale of the Switch product line in the first quarter of fiscal 2017.

## Net Inventories

Inventories consisted of the following:

Net Inventories				% change	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
(Dollars in thousands)	March 30, 2019	March 31, 2018	March 25, 2017		
Raw materials	\$ 759	\$ 2,290	\$ 1,775	(67)%	29%
Work-in-progress	1,523	2,100	2,155	(27)%	(3)%
Finished goods	57	561	473	(90)%	19%
Demonstration inventory	395	536	408	(26)%	31%
Total	\$ 2,734	\$ 5,487	\$ 4,811	(50)%	14%

Net inventories decreased by \$2.8 million at March 30, 2019 compared to March 31, 2018. The decrease was primarily the result of the impact of the adoption of ASC 606 as well as lower inventory due to the timing of RADAR filter production, the shipment of an ASGA system, and lower demonstration inventory.

Net inventories increased by \$676,000 at March 25, 2018 compared to March 25, 2017. The increase was primarily the result of higher raw materials inventory due to the timing of RADAR filter production, and increased demonstration inventory to support ASGA sales efforts.

## Financial Condition and Liquidity

	Fiscal Year Ended	
	March 30, 2019	March 31, 2018
Cash and cash equivalents	\$ 878	\$ 1,485
Total current assets	5,534	7,423
Total current liabilities	3,913	7,809
Working capital	\$ 1,621	\$ (386)
Current ratio	1.41	0.95

As of March 30, 2019, Giga-tronics had \$878,000 in cash and cash equivalents, compared to \$1.5 million as of March 31, 2018. The Company had positive working capital of \$1.6 million at March 30, 2019 compared to negative working capital of (\$386,000) at March 31, 2018. The current ratio (current assets divided by current liabilities) at March 30, 2019 was 1.41 compared to 0.95 at March 31, 2018. The increase in working capital was primarily due to the acceleration of revenue of \$671,000, and an increase in prepaids and other current assets of \$1.3 million, offset by a decrease in deferred revenue of \$3.4 million, and a decrease in inventories of \$2.8 million, all of which resulted from the adoption of ASC 606 during fiscal 2019.

## Cash Flows

The following summary of our cash flows for the periods indicated has been derived from our consolidated financial statements included elsewhere in this filing:

	Fiscal Year Ended	
	March 30, 2019	March 31, 2018
Net cash used in operating activities	\$ (1,307)	\$ (1,617)
Net cash used in investing activities	-	(688)
Net cash provided by financing activities	\$ 700	\$ 2,369

### Cash Flows from Operating Activities

We experienced negative cash flows from operating activities for fiscal years 2019 and 2018 due primarily to operating results.

Cash used by operating activities during the fiscal year ended March 30, 2019 of \$1.3 million was primarily attributable to our net loss, and changes in our working capital accounts, partially offset by other non-cash charges of \$264,000 for depreciation and amortization and \$245,000 for share-based compensation. Cash flow from our operating assets and liabilities decreased by \$1.2 million as a result of decreased inventories of \$1.2 million, a \$133,000 increase in accrued payroll and benefits, a \$807,000 decrease in deferred revenue, a \$1.1 million increase in prepaid expenses and other current assets, a \$204,000 increase in accounts receivable, a decrease in accounts payable of \$249,000, and a \$20,000 decrease in other accrued liabilities.

Cash used by operating activities during the fiscal year ended March 31, 2018 of \$1.6 million was primarily attributable to our net loss of \$3.1 million and a gain on the sale of a product line of \$324,000, offset by non-cash charges of \$1.1 million for depreciation and amortization, \$251,000 for share-based compensation and a \$487,000 increase in deferred rent. Cash flow from our operating assets and liabilities decreased by \$83,000 primarily as a result of increased inventories of \$676,000, a decrease in accrued payroll and benefits and deferred revenue of \$240,000 each, and a \$111,000 decrease in accounts payable, offset by a \$590,000 decrease in accounts receivable, a \$365,000 decrease in prepaid expenses and other current assets and a \$229,000 increase in other current liabilities.

We expect that cash flows from operating activities will fluctuate in future periods due to a number of factors including our sales, which fluctuate significantly from one period to another due to the timing of receipt of contracts, operating results, amounts of non-cash charges, and the timing of our billings, collections and disbursements.

### Cash Flows from Investing Activities

Cash used in investing activities for the fiscal year ended March 30, 2019 was zero.

Cash used in investing activities for the fiscal year ended March 31, 2018 was \$688,000 as a result of leasehold improvements in connection with the Company's facility relocation to Dublin, California.

### Cash Flows from Financing Activities

Cash provided by financing activities for the fiscal year ended March 30, 2019 was \$700,000, primarily due to net proceeds of \$1.2 million from the Company's issuance of Series E Shares as well as proceeds from the exercise of warrants of \$112,000, partially offset by a \$552,000 decrease in our line of credit and a \$52,000 decrease in our capital lease.

Cash provided by financing activities for the fiscal year ended March 31, 2018 was \$2.4 million, primarily due to net proceeds of \$1.5 million from a new term loan with PFG and net proceeds of \$1.0 million from the Company's issuance of Series E convertible preferred stock.

## Liquidity and Capital Resources

The Company incurred a net loss of \$1.0 million and \$3.1 million in fiscal years 2019 and 2018, respectively. These losses have contributed to an accumulated deficit of \$28.5 million as of March 30, 2019. The Company has also experienced delays in the development or refinement of features, receipt of orders, and shipments for our RADAR/EW test system products. These delays have contributed, in part, to the losses and decreases in working capital.

The RADAR/EW test system products have shipped to several customers, but potential delays in the development of features, longer than anticipated sales cycles, or uncertainty as to the Company's ability to efficiently manufacture our EW test system products, could significantly contribute to additional future losses and decreases in working capital.

To help fund operations, we rely on advances under the line of credit with Western Alliance Bank (formerly Bridge Bank). On March 11, 2019, the Company entered into an Amended and Restated Business Financing Agreement (the "Restated Financing Agreement") with Western Alliance Bank. The Restated Financing Agreement amends, restates and replaces the Company's Business Financing Agreement with Western Alliance Bank (doing business as Bridge Bank) dated May 6, 2015 (as previously amended, the "Previous Financing Agreement") in its entirety.

Under the Restated Financing Agreement, Western Alliance Bank may advance up to 85% of the amounts of invoices issued by the Company, up to a maximum of \$2,500,000 in aggregate advances outstanding at any time. The Restated Financing Agreement eliminates a \$500,000 non-formula borrowing base and an asset coverage ratio financial covenant (see Item 8. Financial Statements and Supplementary Data, – Notes to Consolidated Financial Statements, Note 5, Accounts Receivable Credit Line).

As of March 30, 2019 and March 31, 2018, the Company's total outstanding borrowings under the Western Alliance Bank line of credit were zero and \$552,000, respectively.

During April 2017, we entered into a \$1.5 million loan agreement with Partners For Growth, V L.P. ("PFG") to provide additional cash to fund our operations. As a result of experiencing continued delays in receiving RADAR/EW test system product orders in fiscal 2018, we were unable to maintain compliance with certain financial covenants required by the PFG loan and, as a result, were subject to a default interest rate between June 2017 and March 2018. On March 26, 2018, and concurrent with the execution of certain stock purchase agreements for the sale of new Series E Convertible Preferred Stock and conditional upon the sale of at least \$1.0 million in gross proceeds thereof, the Company and PFG entered into a modification agreement which provided for the restructuring of certain terms of the PFG loan including resetting of the financial covenants for the remaining loan term (see Item 8. Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements Note 6, Term Loan and Warrants).

In order to raise additional working capital and to restructure the PFG loan, on March 26, 2018, the Company entered into a Securities Purchase Agreement for the sale of 43,800 shares of a newly designated series of 6.0% Series E Senior Convertible Voting Perpetual Preferred Stock to approximately 15 private investors. The purchase price for each Series E Share was \$25.00. Gross proceeds received by the Company were approximately \$1.095 million (the "Private Placement"). Net proceeds to the Company after fees and expenses of the Private Placement was approximately \$1.0 million. Each Series E Share is initially convertible at the option of the holder at the purchase price of \$0.25 per share of common stock, which is 100 shares of the Company's common stock per each Series E Share (see Item 8. Financial Statements and Supplementary Data, Note 19, Preferred Stock – Series E Senior Convertible Voting Preferred Stock).

In December 2018, the Company and PFG entered into an additional modification agreement which conditionally extended the maturity date of the loan from April 27, 2019 to November 1, 2019, required the Company to pay all accrued interest on May 1, 2019 and requires the Company to make monthly prepayments of principal of \$75,000 and accrued interest beginning on May 1, 2019 until maturity. The effectiveness of the modification was conditioned on the Company raising \$500,000 in additional capital. As of March 30, 2019, the Company had satisfied this condition.

On March 11, 2019, the Company and PFG agreed to further modify the 2017 Loan Agreement to extend the maturity date to March 1, 2020 and add financial covenants requiring the Company to maintain a minimum tangible net worth and minimum revenues described in the modified 2017 Loan Agreement (see Item 8. Financial Statements and Supplementary Data, Notes to Consolidated Financial Statements Note 6, Term Loan and Warrants).

In order to raise additional working capital for the fiscal year ended March 30, 2019, the Company issued an additional 56,200 Series E shares to both new and existing investors at a purchase price of \$25.00 per share for total gross proceeds of \$1,405,000. Each Series E Share is initially convertible (at the option of the holder) at a conversion price of \$0.25 per share of common stock, representing 100 shares of the Company's common stock per each Series E Share. As of March 30, 2019, 1,600 issued Series E Shares were converted at the option of the holders and the Company has issued an aggregate of 160,000 shares of common stock upon conversion (see Item 8. Financial Statements and Supplementary Data, Note 17, Preferred Stock and Warrants – Series E Senior Convertible Voting Perpetual Preferred Stock).

Additionally, to assist with the upfront purchases of inventory required for future product deliveries, the Company entered into advance payment arrangements with certain customers, whereby the customers reimburse the Company for raw material purchases prior to the shipment of the finished products. The Company will continue to seek similar terms in future agreements with these customers and other customers.

Management will continue to review all aspects of its business including, but not limited to, the contribution of its individual business segments in an effort to improve cash flow and reduce costs and expenses, while continuing to invest, to the extent possible, in new product development for future revenue streams. Management will also continue seeking additional working capital and liquidity through debt (including debt refinancing), or equity financings.

Management believes that through the actions to date and possible future actions described above, we should have the necessary liquidity to continue operations at least twelve months from the issuance of the financial statements.

#### **Contractual Obligations**

We lease our Dublin, California facility under an operating lease agreement which expires in March 2023. We also lease certain equipment under operating leases. Total future minimum lease payments under these leases amount to approximately \$2.1 million, of which \$450,000 is scheduled to be paid in fiscal 2020.

We lease our Nashua, New Hampshire facility under an operating lease agreement which expires January 31, 2022. Total future minimum lease payments under this lease amount to \$49,500, of which \$18,000 is scheduled to be paid in fiscal 2020.

We lease equipment under capital leases that expire through September 2020. The future minimum lease payments under these leases are approximately \$69,000.

We are committed to purchase certain inventory under non-cancelable purchase orders. As of March 30, 2019, total non-cancelable purchase orders were approximately \$1,260,000 and are scheduled to be delivered to the Company at various dates through March 2020.

#### **Critical Accounting Policies**

Our discussion and analysis of our financial condition and the results of operations are based upon the consolidated financial statements included in this report and the data used to prepare them. The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America and management is required to make judgments, estimates and assumptions in the course of such preparation. The Summary of Significant Accounting Policies included with the consolidated financial statements describes the significant accounting policies and methods used in the preparation of the consolidated financial statements. On an ongoing basis, we re-evaluate our judgments, estimates and assumptions. We base our judgment and estimates on historical experience, knowledge of current conditions, and our beliefs of what could occur in the future considering available information. Actual results may differ from these estimates under different assumptions or conditions. We have identified the following as our critical accounting policies:

##### Revenue Recognition

Beginning April 1, 2018, the Company follows the provisions of ASU 2014-09 as subsequently amended by the Financial Accounting Standards Board ("FASB") between 2015 and 2017 and collectively known as ASC Topic 606, *Revenue from Contracts with Customers* ("ASC 606"). Amounts for prior periods are not adjusted and continue to be reported in accordance with the Company's prior historic accounting practices. The guidance provides a unified model to determine how revenue is recognized. In addition, the standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.



In determining the appropriate amount of revenue to be recognized as we fulfill our obligations under our agreements, we perform the following steps: (i) identify the promised goods or services in the contract; (ii) determine whether the promised goods or services are performance obligations including whether they are distinct in the context of the contract; (iii) measure the transaction price, including the constraint on variable consideration; (iv) allocate the transaction price to the performance obligations based on estimated selling prices; and (v) recognize revenue when (or as) we satisfy each performance obligation.

We generate revenue through the design, manufacture, and sale of products used in the defense industry to major prime defense contractors, the armed services (primarily in the U.S.) and research institutes. There is generally one performance obligation in our contracts with our customers. For highly engineered products, the customer typically controls the work in process as evidenced either by contractual termination clauses or by our right to payment for costs incurred to date plus a reasonable profit for products or services that do not have an alternative use. In these circumstances, the performance obligation is the design and manufacturing service. As control transfers continuously over time on these contracts, revenue is recognized based on the extent of progress towards completion of the performance obligation using a cost-to-cost method. Engineering services are also satisfied over time and recognized on the cost-to-cost method. These types of revenue arrangements are typical for our defense contracts within the Microsource segment for its RADAR filter products used in fighter jet aircrafts.

For the sale of standard or minimally customized products, the performance obligation is the series of finished products which are recognized at the points in time the units are transferred to the control of the customer, typically upon shipment. This type of revenue arrangement is typical for our commercial contracts within the Giga-tronics segment for its Advanced Signal Generation and Analysis system products used for testing RADAR and Electronic Warfare ("RADAR/EW") equipment.

#### Product Warranties

Our warranty policy generally provides one to three years of coverage depending on the product. We record a liability for estimated warranty obligations at the date products are sold. The estimated cost of warranty coverage is based on our actual historical experience with our current products or similar products. For new products, the required reserve is based on historical experience of similar products until sufficient historical data has been collected on the new product. Adjustments are made as new information becomes available.

#### Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are stated at their net realizable values. We have estimated an allowance for uncollectible accounts based on our analysis of specifically identified problem accounts, outstanding receivables, consideration of the age of those receivables, our historical collection experience, and adjustments for other factors management believes are necessary based on perceived credit risk.

#### Inventory

Inventories are stated at the lower of cost or market. Cost is determined on a first-in, first-out basis. We periodically review inventory on hand to identify and write down excess and obsolete inventory based on estimated product demand.

#### Income Taxes

Income taxes are accounted for using the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Future tax benefits are subject to a valuation allowance when management is unable to conclude that its deferred tax assets will more likely than not be realized. The ultimate realization of deferred tax assets is dependent upon generation of future taxable income during the periods in which those temporary differences become deductible. Management considers both positive and negative evidence and tax planning strategies in making this assessment.

We consider all tax positions recognized in the consolidated financial statements for the likelihood of realization. When tax returns are filed, it is highly certain that some positions taken would be sustained upon examination by the taxing authorities, while others are subject to uncertainty about the merits of the positions taken or the amounts of the positions that would be ultimately sustained. The benefit of a tax position is recognized in the financial statements in the period during which, based on all available evidence, management believes it is more likely than not that the position will be sustained upon examination, including the resolution of appeals or litigation processes, if any. Tax positions that meet the more-likely-than-not recognition threshold are measured as the largest amount of tax benefit that is more than 50 percent likely of being realized upon settlement with the applicable taxing authority. The portion of the benefits associated with tax positions taken that exceeds the amount measured as described above, if any, would be reflected as unrecognized tax benefits, as applicable, in the accompanying consolidated balance sheets along with any associated interest and penalties that would be payable to the taxing authorities upon examination. We also recognize accrued interest and penalties, if any, related to unrecognized tax benefits as a component of the provision for income taxes in the consolidated statements of operations.

#### Share Based Compensation

We have a stock incentive plan that provides for the issuance of stock options and restricted stock to employees and directors. We calculate share based compensation expense for stock options using a Black-Scholes-Merton option pricing model and record the fair value of stock option and restricted stock awards expected to vest over the requisite service period. In so doing, we make certain key assumptions in making estimates used in the model. We believe the estimates used, which are presented in the Notes to Consolidated Financial Statements, are appropriate and reasonable.

#### Software Development Costs

We expense development costs included in the research and development of new products and enhancements to existing products as incurred, until technological feasibility in the form of a working model has been established. Development costs of computer software to be sold, leased, or otherwise marketed are subject to capitalization beginning when our product's technological feasibility has been established and ending when the product is available for general release to our customers.

#### **Off-Balance-Sheet Arrangements**

We have no off-balance-sheet arrangements (including standby letters of credit, guarantees, contingent interests in transferred assets, contingent obligations indexed to its own stock or any obligation arising out of a variable interest in an unconsolidated entity that provides credit or other support to the Company), that have or are likely to have a material effect on its financial conditions, changes in financial conditions, revenue, expense, results of operations, liquidity, capital expenditures or capital resources.

#### **ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

Pursuant to Item 305 of Regulation S-K, the Company, as a smaller reporting company, is not required to provide the information required by this item.

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

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**GIGA-TRONICS INCORPORATED**  
**CONSOLIDATED BALANCE SHEETS**  
(In thousands except share data)

	March 30, 2019	March 31, 2018
<b>Assets</b>		
Current assets:		
Cash and cash-equivalents	\$ 878	\$ 1,485
Trade accounts receivable, net of allowance of \$8 and \$8, respectively	568	364
Inventories, net	2,734	5,487
Prepaid expenses and other current assets	1,354	87
<b>Total current assets</b>	<b>5,534</b>	<b>7,423</b>
Property and equipment, net	569	833
Other long term assets	176	175
<b>Total assets</b>	<b>\$ 6,279</b>	<b>\$ 8,431</b>
<b>Liabilities and shareholders' equity</b>		
Current liabilities:		
Line of credit	\$ —	\$ 552
Loan payable, net of discounts and issuance costs	1,781	1,447
Accounts payable	747	996
Accrued payroll and benefits	476	343
Deferred revenue	—	3,374
Deferred rent	74	58
Capital lease obligations	41	52
Deferred liability related to asset sale	40	40
Other current liabilities	754	947
<b>Total current liabilities</b>	<b>3,913</b>	<b>7,809</b>
Other non-current liabilities	172	—
Long term deferred rent	358	429
Long term obligations - capital lease	21	62
<b>Total liabilities</b>	<b>4,464</b>	<b>8,300</b>
Commitments and contingencies		
Shareholders' equity:		
Convertible preferred stock of no par value; Authorized - 1,000,000 shares		
Series A - designated 250,000 shares; no shares at March 30, 2019 and March 31, 2018 issued and outstanding	—	—
Series B, C, D - designated 19,500 shares; 18,533.51 shares at March 30, 2019 and March 31, 2018 issued and outstanding; (liquidation preference of \$3,540 at March 30, 2019 and March 31, 2018)	2,911	2,911
Series E - designated 100,000 shares; 98,400 shares at March 30, 2019 and 43,800 shares at March 31, 2018 issued and outstanding; (liquidation preference of \$3,690 at March 30, 2019 and \$1,643 at March 31, 2018)	1,895	702
Common stock of no par value; Authorized - 40,000,000 shares; 11,360,511 shares at March 30, 2019 and 10,312,653 at March 31, 2018 issued and outstanding	25,557	25,200
Accumulated deficit	(28,548)	(28,682)
<b>Total shareholders' equity</b>	<b>1,815</b>	<b>131</b>
<b>Total liabilities and shareholders' equity</b>	<b>\$ 6,279</b>	<b>\$ 8,431</b>

*See Accompanying Notes to Consolidated Financial Statements*

**GIGA-TRONICS INCORPORATED**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**  
(In thousands except per share data)

	Years Ended	
	March 30, 2019	March 31, 2018
<b>Net revenue</b>		
Goods	\$ 2,123	\$ 2,915
Services	9,025	6,885
Total revenue	11,148	9,800
Cost of sales	6,425	7,064
<b>Gross profit</b>	4,723	2,736
Operating expenses:		
Engineering	1,304	1,794
Selling, general and administrative	3,707	4,076
Total operating expenses	5,011	5,870
<b>Operating loss</b>	(288)	(3,134)
Gain on adjustment of warrant liability to fair value	—	172
Gain on sale of product line	—	324
Interest expense, net	(713)	(461)
<b>Loss before income taxes</b>	(1,001)	(3,099)
Provision for income taxes	42	2
<b>Net loss</b>	\$ (1,043)	\$ (3,101)
Deemed dividend on Series E shares	—	(557)
<b>Net loss attributable to common shareholders</b>	\$ (1,043)	\$ (3,658)
<b>Loss per common share – basic</b>	\$ (0.10)	\$ (0.38)
<b>Loss per common share – diluted</b>	\$ (0.10)	\$ (0.38)
<b>Weighted average common shares used in per share calculation:</b>		
Basic	10,775	9,738
Diluted	10,775	9,738

*See Accompanying Notes to Consolidated Financial Statements*

**GIGA-TRONICS INCORPORATED**  
**CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY**  
(In thousands except share data)

	Preferred Stock		Common Stock		Accumulated		Total
	Shares	Amount	Shares	Amount	Deficit		
<b>Balance at March 25, 2017</b>	18,534	\$ 2,911	9,594,203	\$ 24,390	\$ (25,581)	\$	1,720
Net loss	—	—	—	—	(3,101)		(3,101)
Restricted stock granted	—	—	586,950	—	—		—
Restricted stock forfeited	—	—	(236,000)	—	—		—
Stock based compensation	—	—	—	251	—		251
Shares issued related to loan agreement	—	—	367,500	224	—		224
Proceeds from issuance of Series E preferred stock, net of issuance costs of \$102	43,800	993	—	—	—		993
Repriced 2016 investor warrants	—	(203)	—	203	—		—
Fair value of the warrants issued to EGE as issuance cost of Series E	—	(54)	—	54	—		—
Repricing of warrants issued to EGE related to 2016 private placement	—	(34)	—	34	—		—
Fair value of modified PFG warrants	—	—	—	44	—		44
Beneficial conversion feature (BCF) upon issuance of Series E preferred shares	—	(557)	—	557	—		—
Deemed dividend of discount to Series E preferred shares resulting from recognition of BCF	—	557	—	(557)	—		—
<b>Balance at March 31, 2018</b>	62,334	3,613	10,312,653	25,200	(28,682)		131
Cumulative effect of ASC 606 Adoption	—	—	—	—	1,177		1,177
Net loss	—	—	—	—	(1,043)		(1,043)
Restricted stock granted	—	—	310,000	—	—		—
Restricted stock forfeited	—	—	(25,000)	—	—		—
Share based compensation	—	—	—	245	—		245
Shares issued related to loan agreement	—	—	30,000	—	—		—
Proceeds from issuance of Series E preferred stock, net of issuance costs of \$212	56,200	1,193	—	—	—		1,193
Warrants exercises	—	—	572,858	112	—		112
Shares issued from conversion of Series E preferred stock	(1,600)	—	160,000	—	—		—
<b>Balance at March 30, 2019</b>	116,934	\$ 4,806	11,360,511	\$ 25,557	\$ (28,548)	\$	1,815

*See Accompanying Notes to Consolidated Financial Statements*

**GIGA-TRONICS INCORPORATED**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(In thousands)

	March 30, 2019	March 31, 2018
<b>Cash flows from operating activities:</b>		
Net loss	\$ (1,043)	\$ (3,101)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	264	1,116
Share based compensation	245	251
Accretion of discounts and issuance costs on debt	224	127
Adjustment of warrant liability to fair value	—	(172)
Change in fair value of equity forward	—	(16)
Gain on sale of product line	—	(324)
Accrued interest and fees on loan payable	111	98
Change in deferred rent	(55)	487
Changes in operating assets and liabilities:		
Trade accounts receivable	(204)	590
Inventories	1,172	(676)
Prepaid expenses and other current assets	(1,078)	365
Accounts payable	(249)	(111)
Accrued payroll and benefits	133	(240)
Deferred revenue	(807)	(240)
Other current and non-current liabilities	(20)	229
<b>Net cash used in operating activities</b>	<b>(1,307)</b>	<b>(1,617)</b>
<b>Cash flows from investing activities:</b>		
Purchases of property and equipment	—	(688)
<b>Net cash used in investing activities</b>	<b>—</b>	<b>(688)</b>
<b>Cash flows from financing activities:</b>		
Payments on capital leases	(52)	(50)
Repayments of line of credit	(552)	(30)
Proceeds from loan payable, net of issuance costs	—	1,456
Proceeds from issuance of Series E preferred stock, net of issuance costs	1,192	993
Proceeds from exercise of warrants	112	—
<b>Net cash provided by financing activities</b>	<b>700</b>	<b>2,369</b>
<b>Increase (decrease) in cash and cash-equivalents</b>	<b>(607)</b>	<b>64</b>
<b>Beginning cash and cash-equivalents</b>	<b>1,485</b>	<b>1,421</b>
<b>Ending cash and cash-equivalents</b>	<b>\$ 878</b>	<b>\$ 1,485</b>
<b>Supplementary disclosure of cash flow information:</b>		
Cash paid for income taxes	\$ 32	\$ 2
Cash paid for interest	\$ 248	\$ 282
<b>Supplementary disclosure of noncash investing and financing activities:</b>		
Cumulative effect of adoption ASC 606 on inventory	\$ (1,581)	\$ —
Cumulative effect of adoption ASC 606 on prepaid expenses and other current assets	\$ 188	\$ —
Cumulative effect of adoption of ASC 606 on deferred revenue	\$ 2,568	\$ —
Fair value of warrants issued to EGE as issuance costs for Series E	\$ —	\$ 54
Fair value of modified warrants	\$ —	\$ 281
Common stock issued in connection with debt issuance	\$ —	\$ 224
Equipment disposal	\$ —	\$ 380

*See Accompanying Notes to Consolidated Financial Statements*

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

### **1 Summary of Significant Accounting Policies**

The accompanying consolidated financial statements include the accounts of Giga-tronics Incorporated (“Giga-tronics”) and its wholly-owned subsidiary, Microsource Incorporated (“Microsource”), collectively the “Company”. The Company’s corporate office and manufacturing facilities are located in Dublin, California.

*Principles of Consolidation* The consolidated financial statements include the accounts of Giga-tronics and its wholly-owned subsidiary. All significant intercompany balances and transactions have been eliminated in consolidation.

*Use of Estimates* The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

*Fiscal Year* The Company’s financial reporting year consists of either a 52 week or 53 week period ending on the last Saturday of the month of March. Fiscal year 2019 ended on March 30, 2019 resulting in a 52 week year. Fiscal year 2018 ended on March 31, 2018, which resulted in a 53 week year. All references to years in the consolidated financial statements relate to fiscal years rather than calendar years.

*Revenue Recognition and Deferred Revenue* Beginning April 1, 2018, the Company follows the provisions of ASU 2014-09 as subsequently amended by the Financial Accounting Standards Board (“FASB”) between 2015 and 2017 and collectively known as ASC Topic 606, *Revenue from Contracts with Customers* (“ASC 606”). Amounts for prior periods are not adjusted and continue to be reported in accordance with the Company’s prior historic accounting practices. The guidance provides a unified model to determine how revenue is recognized. In addition, the standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.

In determining the appropriate amount of revenue to be recognized as it fulfills its obligations under its agreements, the Company performs the following steps: (i) identifies the promised goods or services in the contract; (ii) determines whether the promised goods or services are performance obligations including whether they are distinct in the context of the contract; (iii) measures the transaction price, including the constraint on variable consideration; (iv) allocates the transaction price to the performance obligations based on estimated selling prices; and (v) recognizes revenue when (or as) the Company satisfies each performance obligation.

The Company generates revenue through the design, manufacture, and sale of products used in the defense industry to major prime defense contractors, the armed services (primarily in the U.S.) and research institutes. There is generally one performance obligation in the Company’s contracts with its customers. For highly engineered products, the customer typically controls the work in process as evidenced either by contractual termination clauses or by the Company’s right to payment for costs incurred to date plus a reasonable profit for products or services that do not have an alternative use. In these circumstances, the performance obligation is the design and manufacturing service. As control transfers continuously over time on these contracts, revenue is recognized based on the extent of progress towards completion of the performance obligation using a cost-to-cost method. Engineering services are also satisfied over time and recognized on the cost-to-cost method. These types of revenue arrangements are typical for the Company’s defense contracts within the Microsource segment for its RADAR filter products used in fighter jet aircrafts.

For the sale of standard or minimally customized products, the performance obligation is the series of finished products which are recognized at the points in time the units are transferred to the control of the customer, typically upon shipment. This type of revenue arrangement is typical for our commercial contracts within the Giga-tronics segment for its Advanced Signal Generation and Analysis system products used for testing RADAR and Electronic Warfare (“RADAR/EW”) equipment.

#### *Performance Obligations*

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account in ASC Topic 606. The Company’s performance obligations include:

- Design and manufacturing services
- Product supply – Distinct goods or services that are substantially the same
- Engineering services



The majority of the Company's contracts have a single performance obligation as the promise to transfer the individual goods or services is not separately identifiable from other promises in the contracts and, therefore, not distinct. The Company's revenue in fiscal 2019 under ASC 606 primarily relates to design and manufacturing services, there was no product supply, and engineering services were nominal.

#### *Transaction Price*

The Company has both fixed and variable consideration. Under the Company's highly engineered design and manufacturing arrangements, advance payments and unit prices are considered fixed, as the product is not returnable and the Company has an enforceable right to reimbursement in the event of a cancellation. For standard and minimally customized products, payments can include variable consideration, such as product returns and sales allowances. The transaction price in engineering services arrangements may include estimated amounts of variable consideration, including award fees, incentive fees, or other provisions that can either increase or decrease the transaction price. Milestone payments are identified as variable consideration when determining the transaction price. At the inception of each arrangement that includes milestone payments, the Company evaluates whether the milestones are considered probable of being achieved and estimates the amount to be included in the transaction price using the most likely amount method. The Company estimates variable consideration at the amount to which they expect to be entitled and determines whether to include estimated amounts as a reduction in the transaction price based largely on an assessment of the conditions that might trigger an adjustment to the transaction price and all information (historical, current and forecasted) that is reasonably available to the Company. The Company includes estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the estimation uncertainty is resolved.

#### *Allocation of Consideration*

As part of the accounting for arrangements that contain multiple performance obligations, the Company must develop assumptions that require judgment to determine the stand-alone selling price of each performance obligation identified in the contract. When a contract contains more than one performance obligation, the Company uses key assumptions to determine the stand-alone selling price of each performance obligation. Because of the customized nature of products and services, estimated stand-alone selling prices for most performance obligations are estimated using a cost-plus margin approach. For non-customized products, list prices generally represent the stand-alone selling price. The Company allocates the total transaction price to each performance obligation based on the estimated relative stand-alone selling prices of the promised goods or service underlying each performance obligation.

#### *Timing of Recognition*

Significant management judgment is required to determine the level of effort required under an arrangement and the period over which the Company expects to complete its performance obligations under the arrangement. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the products or services to be provided. The Company generally uses the cost-to-cost measure of progress as this measure best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. Under the cost-to-cost method, the extent of progress towards completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. Revenue is recognized for design and manufacturing services and for engineering services over time proportionate to the costs that the Company has incurred to perform the services using the cost-to-cost input method and for products at a point in time. Approximately 81% of the Company's revenue is recognized over time, with the remaining 19% recognized at a point in time.

#### *Changes in Estimates*

The effect of a contract modification on the transaction price and the measure of progress for the performance obligation to which it relates, is recognized as an adjustment to revenue (either as an increase in or a reduction of revenue) on a cumulative catch-up basis.

For contracts using the cost-to-cost method, management reviews the progress and execution of the performance obligations. This process requires management judgment relative to estimating contract revenue and cost and making assumptions for delivery schedule. This process requires management's judgment to make reasonably dependable cost estimates. Since certain contracts extend over a longer period of time, the impact of revisions in cost and revenue estimates during the progress of work may adjust the current period earnings through a cumulative catch-up basis. This method recognizes, in the current period, the cumulative effect of the changes on current and prior quarters. Contract cost and revenue estimates for significant contracts are generally reviewed and reassessed quarterly. Revenue recognized over time using the cost-to-cost method represented approximately 81% of revenue for fiscal 2019.

### *Balance Sheet Presentation*

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and deferred revenue (contract liabilities) on the Condensed Consolidated Balance Sheet. Under the typical payment terms of over time contracts, the customer pays either performance-based payments or progress payments. Amounts billed and due from customers are classified as receivables on the Condensed Consolidated Balance Sheet. Interim payments may be made as work progresses, and for some contracts, an advance payment may be made. A liability is recognized for these interim and advance payments in excess of revenue recognized and is presented as a contract liability which is included within accrued liabilities and other long-term liabilities on the Condensed Consolidated Balance Sheet. Contract liabilities typically are not considered a significant financing component because these cash advances are used to meet working capital demands that can be higher in the early stages of a contract. When revenue recognized exceeds the amount billed to the customer, an unbilled receivable (contract asset) is recorded for the amount the Company is entitled to receive based on its enforceable right to payment.

Remaining performance obligations represent the transaction price of firm orders for which work has not been performed as of the period end date and excludes unexercised contract options and potential orders under ordering-type contracts (e.g., indefinite-delivery, indefinite-quantity).

### *Recognition Prior to April 1, 2018*

Prior to April 1, 2018 under the legacy Generally Accepted Accounting Principles (“GAAP”), the Company recorded revenue when there was persuasive evidence of an arrangement, delivery had occurred, the price was fixed and determinable, and collectability was reasonably assured. This occurred when products were shipped or the customer accepted title transfer. If the arrangement involved acceptance terms, the Company deferred revenue until product acceptance was received. On certain large development contracts, revenue was recognized upon achievement of substantive milestones. Advanced payments were recorded as deferred revenue until the revenue recognition criteria described above had been met. Amounts for periods ending prior to April 1, 2018 have not been adjusted for ASC 606 and continue to be reported in accordance with the Company’s previous accounting practices.

*Software Development Costs* Development costs included in the research and development of new software products and enhancements to existing software products are expensed as incurred, until technological feasibility in the form of a working model has been established. Capitalized development costs are amortized over the expected life of the product and evaluated each reporting period for impairment.

### *New Accounting Standards*

In June 2018, the FASB issued ASU 2018-07, “Improvements to Nonemployee Share-Based Payment Accounting,” to simplify the accounting for share based transactions with nonemployees in which the grantor acquires goods or services to be used or consumed. Under the new standard, most of the guidance on recording share-based compensation granted to nonemployees will be aligned with the requirements for share-based compensation granted to employees. This standard will be effective in the first quarter of fiscal 2020, and early adoption is permitted. We do not expect the adoption of this standard to have a material impact on our consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02 (“ASU 2016-02”), Leases. ASU 2016-02 requires that lessees recognize assets and liabilities for the rights and obligations for leases with a lease term of more than one year. The amendments in this ASU are effective for annual periods ending after December 15, 2018. Early adoption is permitted. The Company is currently evaluating the impact of the adoption of ASU 2016-02 on its consolidated financial statements.

In May 2014, the FASB issued Revenue from Contracts with Customers. In August 2015 and March, April, May and December 2016, the FASB issued additional amendments to the new revenue guidance relating to reporting revenue on a gross versus net basis, identifying performance obligations, licensing arrangements, collectability, noncash consideration, presentation of sales tax, transition, and clarifying examples. Collectively these are referred to as ASC 606, which replaces all legacy GAAP guidance on revenue recognition and eliminates all industry-specific guidance. ASC 606 establishes a broad principle that would require an entity to recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve this principle, an entity identifies the contract with a customer, identifies the separate performance obligations in the contract, determines the transaction price, allocates the transaction price to the separate performance obligations and recognizes revenue when each separate performance obligation is satisfied. ASC 606 was further updated to provide clarification on a number of specific issues as well as requiring additional disclosures. ASC 606 may be applied either retrospectively or through the use of a modified-retrospective method. The full retrospective method requires companies to recast each prior reporting period presented as if the new guidance had always existed. Under the modified retrospective method, companies would recognize the cumulative effect of initially applying the standard as an adjustment to opening retained earnings at the date of initial application. ASC 606 is effective for annual reporting periods beginning after December 15, 2017, and early adoption is permitted beginning in the first quarter of 2017.

The Company adopted ASC 606 on April 1, 2018 (beginning of the Company's fiscal year) using the modified retrospective method. Under this approach, no restatement of fiscal years 2017 or 2018 was required. Rather, the effect of the adoption was recorded as a cumulative adjustment decreasing the opening balance of accumulated deficit at April 1, 2018.

The most significant change relates to the timing of revenue and cost recognition on the Company's customer contracts. Under ASC 606, revenue is recognized as the customer obtains control of the goods and services promised in the contract. Given the nature of the Company's products and terms and conditions in the contracts, the customer typically obtains control as the Company performs work under such contract. Therefore, the Company expects to recognize revenue over time for substantially all of its contracts using the percentage-of-completion cost-to-cost method. As a result, the Company now recognizes revenue for these contracts as it incurs costs, as opposed to when units are delivered. This change has generally resulted in earlier revenue recognition in the performance period as compared to the legacy method for those contracts, giving rise to a decrease to the Company's opening balance of accumulated deficit as of April 1, 2018.

Adopting ASC 606 involves significant new estimates and judgments such as estimating stand-alone selling prices, variable consideration, and total costs to complete the contract. All of the estimates are subject to change during the performance of the contract which may cause more variability due to significant estimates involved in the new accounting.

The cumulative effect of the changes made to the Company's consolidated April 1, 2018 balance sheet for the adoption of ASC 606 were as follows (in thousands):

	<b>Balance at March 31, 2018</b>	<b>ASC 606 Adjustments</b>	<b>Balance at April 1, 2018</b>
<b>Assets</b>			
Prepaid and other current assets	\$ 87	\$ 188	\$ 275
Inventories, net	5,487	(1,581)	3,906
<b>Liabilities</b>			
Deferred revenue	\$ 3,374	\$ (2,568)	\$ 806
<b>Shareholders' Equity</b>			
Accumulated deficit	\$ (28,682)	\$ 1,176	\$ (27,506)

In accordance with the requirements of ASC 606, the disclosure of the impact of adoption on our condensed consolidated income statement and balance sheet for fiscal year ended March 30, 2019 was as follows (in thousands except for net loss per share):

<b>For the fiscal year ended March 30, 2019</b>	<b>Without ASC 606 Adoption</b>	<b>ASC 606 Adjustments</b>	<b>As Reported</b>
<b>Assets</b>			
Prepaid and other current assets	\$ 58	\$ 1,296	\$ 1,354
Inventories, net	4,815	(2,081)	2,734
<b>Liabilities</b>			
Deferred revenue	\$ 2,132	\$ (2,132)	\$ -
<b>Shareholders' Equity</b>			
Accumulated deficit	\$ (28,714)	\$ 166	\$ (28,548)
<b>Revenue</b>			
Revenue	\$ 10,477	\$ 671	\$ 11,148
<b>Cost of sales</b>			
Cost of sales	\$ 5,925	\$ 500	\$ 6,425
<b>Net loss</b>	\$ (1,214)	\$ 171	\$ (1,043)
Net loss per share, basic and fully diluted	\$ (0.11)	\$ 0.02	\$ (0.10)

The following table presents changes in the Company's contract assets and liabilities for the fiscal year ended March 30, 2019.

	<u>Balance at Beginning of the Period</u>	<u>Additions</u>	<u>Deductions</u>	<u>Balance at the end of the Period</u>
	(in thousands)			
Contract Assets	\$ 189	\$ 1,535	\$ (428)	\$ 1,296
Contract Liabilities: Deferred Revenue	\$ (806)	\$ (1,846)	\$ 2,652	\$ -

During the fiscal year ended March 30, 2019, the Company recognized the following revenues (in thousands):

Revenue recognized in the period from:	
Amounts included in contract liabilities at the beginning of the period:	
Performance obligations satisfied	\$ 1,063
New activities in the period:	
Changes in estimates	119
Performance obligations satisfied	<u>7,843</u>
Total services revenue	<u>\$ 9,025</u>

As of March 30, 2019, the aggregate amount of the transaction price allocated to remaining performance obligations was \$4.0 million, of which the Company expects to recognize \$2.7 million into revenue within the next twelve months and \$1.3 million after the next twelve months.

*Accrued Warranty* The Company's warranty policy generally provides one to three years of coverage depending on the product. The Company records a liability for estimated warranty obligations at the date products are sold. The estimated cost of warranty coverage is based on the Company's actual historical experience with its current products or similar products. For new products, the required reserve is based on historical experience of similar products until such time as sufficient historical data has been collected on the new product. Adjustments are made as new information becomes available.

*Inventories* Inventories are stated at the lower of cost or fair value using full absorption and standard costing. Cost is determined on a first-in, first-out basis. Standard costing and overhead allocation rates are reviewed by management periodically, but not less than annually. Overhead rates are recorded to inventory based on capacity management expects for the period the inventory will be held. Reserves are recorded within cost of sales for impaired or obsolete inventory when the cost of inventory exceeds its estimated fair value. Management evaluates the need for inventory reserves based on its estimate of the amount realizable through projected sales including an evaluation of whether a product is reaching the end of its life cycle. When inventory is discarded it is written off against the inventory reserve, as inventory generally has already been fully reserved for at the time it is discarded.

*Research and Development* Research and development expenditures, which include the cost of materials consumed in research and development activities, salaries, wages and other costs of personnel engaged in research and development, costs of services performed by others for research and development on the Company's behalf and indirect costs are expensed as operating expenses when incurred. Research and development costs totaled approximately \$1.3 million and \$1.8 million for the years ended March 30, 2019 and March 31, 2018, respectively.

*Property and Equipment* Property and equipment are stated at cost. Depreciation is calculated using the straight-line method over the estimated useful lives of the respective assets, which range from three to ten years for machinery and equipment and office fixtures. Leasehold improvements and assets acquired under capital leases are amortized using the straight-line method over the shorter of the estimated useful lives of the respective assets or the lease term.

The Company reviews its long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If such review indicates that the carrying amount of an asset exceeds the sum of its expected future cash flows on an undiscounted basis, the asset's carrying amount would be written down to fair value. Additionally, the Company reports long-lived assets to be disposed of at the lower of carrying amount or fair value less cost to sell. As of March 30, 2019 and March 31, 2018, management believes there has been no impairment of the Company's long-lived assets.

*Warrants to Purchase Common Stock* Warrants are accounted for in accordance with the applicable accounting guidance provided in ASC 815 -*Derivatives and Hedging* as either derivative liabilities or as equity instruments depending on the specific terms of the agreements. Liability-classified instruments are recorded at fair value at each reporting period with any change in fair value recognized as a component of change in fair value of derivative liabilities in the consolidated statements of operations. The Company estimates liability-classified instruments using either a Monte Carlo simulation or the Black Scholes option-pricing model, depending on the nature of the warrant's terms. The valuation methodologies require management to develop assumptions and inputs that have significant impact on such valuations. The Company periodically evaluates changes in facts and circumstances that could impact the classification of warrants from liability to equity, or vice versa.

On March 26, 2018, the Company and holders of the Company's liability-classified warrants, Partners For Growth, V L.P. ("PFG"), agreed to eliminate the \$217,000 cash "put" provision contained in warrants in exchange for the Company issuing 150,000 shares of the Company's common stock. Upon removal of the put, the warrants were re-valued using the Black-Scholes option-pricing model prior to being reclassified to equity. The resulting change in fair value of the warrants, along with the fair value of the common stock of approximately of \$50,000 issued to PFG, was recognized as gain on adjustment of warrant liability in the consolidated statements of operations.

*Embedded Derivatives* Embedded derivatives must be separately measured from the host contract if all the requirements for bifurcation are met. The assessment of the conditions surrounding the bifurcation of embedded derivatives depends on the nature of the host contract. Bifurcated embedded derivatives are recognized at fair value, with changes in fair value recognized in the statement of operations each period. Bifurcated embedded derivatives are classified with the related host contract in the Company's consolidated balance sheets.

*Deferred Rent* Rent expense is recognized in an amount equal to the guaranteed base rent plus contractual future minimum rental increases amortized on the straight-line basis over the terms of the leases, including free rent periods.

*Income Taxes* Income taxes are accounted for using the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Future tax benefits are subject to a valuation allowance when management is unable to conclude that its deferred tax assets will more likely than not be realized. The ultimate realization of deferred tax assets is dependent upon generation of future taxable income during the periods in which those temporary differences become deductible. Management considers both positive and negative evidence and tax planning strategies in making this assessment.

The Company considers all tax positions recognized in its financial statements for the likelihood of realization. When tax returns are filed, it is highly certain that some positions taken would be sustained upon examination by the taxing authorities, while others are subject to uncertainty about the merits of the positions taken or the amounts of the positions that would be ultimately sustained. The benefit of a tax position is recognized in the financial statements in the period during which, based on all available evidence, management believes it is more likely than not that the position will be sustained upon examination, including the resolution of appeals or litigation processes, if any. Tax positions that meet the more-likely-than-not recognition threshold are measured as the largest amount of tax benefit that is more than 50 percent likely of being realized upon settlement with the applicable taxing authority. The portion of the benefits associated with tax positions taken that exceeds the amount measured as described above, if any, would be reflected as unrecognized tax benefits, as applicable, in the accompanying consolidated balance sheets along with any associated interest and penalties that would be payable to the taxing authorities upon examination. The Company recognizes accrued interest and penalties, if any, related to unrecognized tax benefits as a component of the provision for income taxes in the consolidated statements of operations.

*Product Development Costs* The Company incurs pre-production costs on certain long-term supply arrangements. The costs, which represent non-recurring engineering and tooling costs, are capitalized as other assets and amortized over their useful life when reimbursable by the customer. All other product development costs are charged to operations as incurred. Capitalized pre-production costs included in inventory were immaterial as of March 30, 2019 and March 31, 2018.

*Software Development Costs* Development costs included in the research and development of new software products and enhancements to existing software products are expensed as incurred, until technological feasibility in the form of a working model has been established. Capitalized development costs are amortized over the expected life of the product and evaluated each reporting period for impairment.

*Discontinued Operations* The Company reviews its reporting and presentation requirements for discontinued operations as it moves to newer technology within the test and measurement market from legacy products to the newly developed Advanced Signal Generator. The disposal of these product line sales represents an evolution of the Company's Giga-tronics Division to a more sophisticated product offered to the same or similar customer base. The Company has evaluated the sales of product lines concluding that each product line does not meet the definition of a "component of an entity" as defined by ASC 205-20. The Company is able to distinguish revenue and gross margin information as disclosed in Note 8, Sale of Product Lines to the accompanying financial statements; however, operations and cash flow information is not clearly distinguishable and the company is unable to present meaningful information about results of operations and cash flows from those product lines.

*Share-based Compensation* The Company records share-based compensation expense for the fair value of all stock options and restricted stock that are ultimately expected to vest as the requisite service is rendered. In fiscal 2018, the Company provided a special grant of nonqualified options to purchase 400,000 shares of common stock at the price of \$0.33 per share based on reliance on the exemption afforded by Section 4(2) of the Securities Act. One fourth of the option vests on the first anniversary of the grant date and 1/48 of the option vests on each of the 36 months thereafter.

The cash flows resulting from the tax benefits resulting from tax deductions in excess of the compensation cost recognized for those options (excess tax benefits) are classified as cash flows from financing in the statements of cash flows. These excess tax benefits were not significant for the Company for the fiscal years ended March 30, 2019 or March 31, 2018.

In calculating compensation related to stock option grants, the fair value of each stock option is estimated on the date of grant using the Black-Scholes-Merton option-pricing model. The computation of expected volatility used in the Black-Scholes-Merton option-pricing model is based on the historical volatility of Giga-tronics' share price. The expected term is estimated based on a review of historical employee exercise behavior with respect to option grants. The risk free interest rate for the expected term of the option is based on the U.S. Treasury yield curve in effect at the time of the grant. Expected dividend yield was not considered in the option pricing formula since the Company has not paid dividends and has no current plans to do so in the future.

The fair value of restricted stock awards is based on the fair value of the underlying shares at the date of the grant. Management makes estimates regarding pre-vesting forfeitures that will impact timing of compensation expense recognized for stock option and restricted stock awards.

*Earnings or Loss Per Common Share* Basic earnings or loss per common share is computed using the weighted average number of common shares outstanding during the period. Diluted earnings per share incorporate the incremental shares issuable upon the assumed exercise of stock options and warrants using the treasury stock method. Anti-dilutive options are not included in the computation of diluted earnings per share. Non-vested shares of restricted stock have non-forfeitable dividend rights and are considered participating securities for the purpose of calculating basic and diluted earnings per share under the two-class method.

*Comprehensive Income or Loss* There are no items of comprehensive income or loss other than net income or loss.

*Financial Instruments and Concentration of Credit Risk* Financial instruments that potentially subject the Company to credit risk consist of cash, cash-equivalents and trade accounts receivable. The Company's cash-equivalents consist of overnight deposits with federally insured financial institutions. Concentration of credit risk in trade accounts receivable results primarily from sales to major customers. The Company individually evaluates the creditworthiness of its customers and generally does not require collateral or other security. At March 30, 2019, three customers combined accounted for 97% of consolidated gross accounts receivable. At March 31, 2018, one customer accounted for 79% of consolidated gross accounts receivable.

*Fair Value of Financial Instruments and Fair Value Measurements* The Company's financial instruments consist principally of cash and cash-equivalents, line of credit, term debt, and warrant derivative liability. The fair value of a financial instrument is the amount at which the instrument could be exchanged in an orderly transaction between market participants to sell the asset or transfer the liability. The Company uses fair value measurements based on quoted prices (unadjusted) for identical assets or liabilities in active markets that the entity can access as of the measurement date (Level 1), significant other observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data (Level 2), or significant unobservable inputs reflect a company's own assumptions about the assumptions that market participants would use in pricing an asset or liability (Level 3), depending on the nature of the item being valued.

## Recently Issued Accounting Standards

In February 2016, the FASB issued ASU 2016-02 (“ASU 2016-02”), Leases. ASU 2016-02 requires that lessees recognize assets and liabilities for the rights and obligations for leases with a lease term of more than one year. The amendments in this ASU are effective for annual periods ending after December 15, 2018. Early adoption is permitted. The Company is currently evaluating the impact of the adoption of ASU 2016-02 on its consolidated financial statements.

### 2 Cash and Cash-Equivalents

Cash and cash-equivalents of \$878,000 and \$1.5 million at March 30, 2019 and March 31, 2018, respectively, consisted of demand deposits with a financial institution that is a member of the Federal Deposit Insurance Corporation (FDIC). At March 30, 2019, \$628,000 of the Company’s demand deposits exceeded FDIC insurance limits.

### 3 Inventories

Inventories consisted of the following:

(Dollars in thousands)	March 30, 2019	March 31, 2018
Raw materials	\$ 759	\$ 2,290
Work-in-progress	1,523	2,100
Finished goods	57	561
Demonstration inventory	395	536
Total	\$ 2,734	\$ 5,487

### 4 Property, Plant and Equipment, net

Property, plant and equipment, net is comprised of the following:

(Dollars in thousands)	March 30, 2019	March 31, 2018
Leasehold improvements	\$ 633	633
Machinery and equipment	4,333	4,333
Computer and software	681	681
Furniture and office equipment	227	227
Subtotal	5,874	5,874
Less: accumulated depreciation and amortization	(5,305)	(5,041)
Total	\$ 569	\$ 833

### 5 Accounts Receivable Line of Credit

On May 6, 2015, the Company entered into a \$2.5 million Revolving Accounts Receivable Line of Credit agreement with Bridge Bank. The agreement provided for a maximum borrowing capacity of \$2.5 million of which \$2.0 million is subject to a borrowing base calculation and \$500,000 is non-formula based. The loan was secured by all assets of the Company including intellectual property and general intangibles and the credit agreement provided for a borrowing capacity equal to 80% of eligible accounts receivable. On May 23, 2017, the Company renewed this credit line (which expired on May 7, 2017) through May 6, 2019. The Company paid an annual commitment fee of \$12,500 in both May 2017 and May 2018. The loan agreement contained financial and non-financial covenants that are customary for this type of lending and includes a covenant to maintain an asset coverage ratio of at least 150% (defined as unrestricted cash and cash equivalents maintained with Bridge Bank, plus eligible accounts receivable aged less than 90 days from the invoice date, divided by the total amount of outstanding principal of all obligations under the loan agreement).

On March 11, 2019, the Company entered into an Amended and Restated Business Financing Agreement (the “Restated Financing Agreement”) with Western Alliance Bank, as successor to Bridge Bank. The Restated Financing Agreement amends, restates and replaces the credit agreement dated May 6, 2015 (as previously amended, the “Previous Financing Agreement”) in its entirety.

Under the Restated Financing Agreement, Western Alliance Bank may advance up to 85% of the amounts of invoices issued by the Company, up to a maximum of \$2.5 million in aggregate advances outstanding at any time. The Restated Financing Agreement eliminates the \$500,000 non-formula borrowing base and an asset coverage ratio financial covenant.

Under the Restated Financing Agreement, interest accrues on outstanding amounts at an annual rate equal to the greater of prime or 4.5% plus, in either case, one percent. The Company is required to pay certain fees, including an annual facility fee of \$14,700, to be paid in two equal semiannual installments. The Company's obligations under the Restated Financing Agreement are secured by a security interest in substantially all of the assets of the Company and any domestic subsidiaries, subject to certain customary exceptions. The Restated Financing Agreement has no specified term and may be terminated by either the Company or Western Alliance Bank at any time.

The Restated Financing Agreement contains customary events of default, including, among others: non-payment of principal, interest or other amounts when due; providing false or misleading representations and information; Western Alliance Bank failing to have an enforceable first lien on the collateral; cross-defaults with certain other indebtedness; certain undischarged judgments; bankruptcy, insolvency or inability to pay debts; and a change of control of the Company. Upon the occurrence and during the continuance of an event of default, the interest rate on the outstanding borrowings increases by 500 basis points and the Western Alliance Bank may declare the loans and all other obligations under the Restated Financing Agreement immediately due and payable.

As of March 30, 2019 and March 31, 2018, the Company's total outstanding borrowings under the Western Alliance Bank/Bridge Bank line of credit were zero and \$552,000, respectively.

## 6 Term Loan and Warrants

On April 27, 2017, the Company entered into a \$1,500,000 loan agreement (the "2017 Loan Agreement") with Partners For Growth V, L.P. ("PFG"), which was funded by PFG on April 28, 2017 (the "2017 Loan"). The 2017 Loan has a maturity date of April 27, 2019, provides for interest only payments during the term of the loan with principal and any accrued interest and fees due upon maturity. The 2017 Loan bears interest at a fixed aggregate per annum rate equal to 16% per annum, of which 9.5% per annum rate is payable monthly in cash and 6.5% per annum rate is accrued monthly and due upon maturity. In addition, the Company agreed to pay PFG a cash fee of up to \$100,000 payable upon maturity (the "back-end fee"), \$76,000 of which was earned on April 27, 2017, and \$24,000 of which is earned at the rate of \$1,000 per month on the first day of each month if the loan principal (or any amount thereof) is outstanding during any day of the prior month. If the Company meets or exceeds certain revenue and net income minimums in fiscal 2018, the amount could be reduced by 25 percent.

Additionally, the 2017 Loan Agreement provides for the Company's issuance of up to 250,000 common shares to PFG, of which 190,000 was earned by PFG upon signing (April 27, 2017) and 60,000 of which is earned at the rate of 2,500 per month on the first day of each month if the loan principal (or any amount thereof) is outstanding during any day of the prior month. The 2017 Loan Agreement includes certain financial covenants related to the revenue achievement and maintenance of tangible net worth. PFG can accelerate the maturity of the loan in case of a default and the Company can prepay the loan before maturity without interest prepayments or penalty. The Company has pledged all of its assets as collateral for the 2017 Loan, including all its accounts, inventory, equipment, deposit accounts, intellectual property and all other personal property. The 2017 Loan is subordinate to the Western Alliance Bank line of credit (see Note 5, Accounts Receivable Line of Credit).

The requirement to issue 60,000 shares of the Company's common stock over the term of the loan is an embedded derivative (an embedded equity forward). The Company evaluated the embedded derivative in accordance with ASC 815-15-25. The embedded derivative is not clearly and closely related to the debt host instrument and therefore has been separately measured at fair value, with subsequent changes in fair value recognized in the consolidated statements of operations.

The proceeds received upon issuing the loan was allocated to: i) common stock, for the fair value of the 190,000 shares of common stock initially issued to the lender; ii) the fair value of the embedded derivative; and iii) the loan host instrument. Upon issuance of the loan, the Company recognized \$1,576,000 of principal payable to PFG, representing the stated principal balance of \$1,500,000 plus the initial back-end fee of \$76,000. The initial carrying value of the loan was recognized net of debt discount aggregating approximately \$326,000, which is comprised of the following:

Fees paid to the lender and third parties	\$	44,000
Back-end fee		76,000
Estimated fair value of embedded equity forward		49,000
Fair value of 190,000 shares of common stock issued to lender		157,000
Aggregate discount amount	\$	326,000



The bifurcated embedded derivative and the debt discount are presented net with the related loan balance in the consolidated balance sheets. The debt discount is amortized to interest expense over the loan's term using the effective interest method. During the fiscal year ended March 31, 2018, the Company amortized discounts of approximately \$127,000 to interest expense. As of March 31, 2018, the Company had issued to PFG 367,500 common shares under the loan.

PFG's ability to call the debt on default (contingent put) and its ability to assess interest rate at a default rate (contingent interest) are embedded derivatives, which the Company evaluated. The fair value of these embedded features was determined to be immaterial and was not bifurcated from the debt host for accounting purposes.

Between June 24, 2017 and March 25, 2018, the Company was not in compliance with the 2017 Loan Agreement's revenue and tangible net worth financial covenants and was subject to a default interest rate of 22% per annum which it accrued and paid when due during this period.

On March 26, 2018, concurrent with the execution of the Securities Purchase Agreement for the Series E Shares (see Note 17 – Preferred Stock and Warrants - Series E Senior Convertible Voting Perpetual Preferred Stock), the Company and PFG entered into a modification agreement providing for the restructuring of certain terms associated with approximately \$1.7 million in indebtedness under the 2017 Loan. Subject to the sale of at least \$1.0 million in Series E Shares, PFG agreed to waive all current defaults and cease applying the applicable default interest rate, returning to the stated non-default rate of 16%, and to lower the revenue and tangible net worth covenants for the remaining term of the loan. As consideration for the modifications, the Company reduced the exercise price of outstanding warrants previously granted to PFG pursuant to PFG's earlier 2014 Loan Agreement and Credit Line to purchase 260,000 shares of the Company's common stock from \$1.42 to \$0.25 per share and extended the exercisability of the warrants by one year to March 13, 2020.

The amendments to the 2017 Loan Agreement were recognized as a loan modification. The change in fair value of the warrants of \$43,700, resulting from the reduced strike price and extension of term, was recognized as a discount to the 2017 Loan and is being amortized to interest expense over the remaining term of the 2017 Loan Agreement.

In December 2018, the Company and PFG agreed to modify the 2017 Loan Agreement to extend the maturity date from April 27, 2019 to November 1, 2019, to require the Company to pay all accrued interest on May 1, 2019 and to require the Company to make monthly prepayments of principal of \$75,000 and accrued interest from May 1, 2019 until maturity. The effectiveness of the modification was conditioned on the Company raising \$500,000 in additional capital. As of March 30, 2019, the Company had satisfied this condition.

On March 11, 2019, the Company and PFG agreed to further modify the 2017 Loan Agreement to extend the maturity date to March 1, 2020 and to add financial covenants requiring the Company to maintain a minimum tangible net worth and minimum revenues. The Company was in compliance with these financial covenants at March 30, 2019.

The Company anticipates it will need to achieve significant RADAR/EW test system shipments and resulting cash inflows and or seek additional funds through the issuance of new debt or equity securities to repay the 2017 Loan (including accrued interest and back end fees) in full upon maturity or otherwise enter into a refinancing agreement with PFG.

## **7 Fair Value**

Pursuant to the accounting guidance for fair value measurement and its subsequent updates, fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (i.e., the "exit price") in an orderly transaction between market participants at the measurement date. The accounting guidance establishes a hierarchy for inputs used in measuring fair value that minimizes the use of unobservable inputs by requiring the use of observable market data when available. Observable inputs are inputs that market participants would use in pricing the asset or liability based on active market data. Unobservable inputs are inputs that reflect the assumptions market participants would use in pricing the asset or liability based on the best information available in the circumstances.

The fair value hierarchy is broken down into the three input levels summarized below:

- *Level 1* —Valuations are based on quoted prices in active markets for identical assets or liabilities and readily accessible by us at the reporting date. Examples of assets and liabilities utilizing Level 1 inputs are certain money market funds, U.S. Treasuries and trading securities with quoted prices on active markets.
- *Level 2* —Valuations based on inputs other than the quoted prices in active markets that are observable either directly or indirectly in active markets. Examples of assets and liabilities utilizing Level 2 inputs are U.S. government agency bonds, corporate bonds, commercial paper, certificates of deposit and over-the-counter derivatives.
- *Level 3* —Valuations based on unobservable inputs in which there are little or no market data, which require us to develop our own assumptions.

The carrying amounts of the Company's cash and cash-equivalents and line of credit approximate their fair values at each balance sheet date due to the short-term maturity of these financial instruments, and generally result in inputs categorized as Level 1 within the fair value hierarchy. The carrying value of the outstanding PFG loan approximates the estimated aggregate fair value and classified with the loan host. The fair value estimate of the embedded equity forward is based on the closing price of the Company's common stock on the measurement date, the risk-free rate, the date of expiration, and any expected cash distributions of the underlying asset before expiration. The estimated fair value of the embedded equity forward represents a Level 2 measurement.

On March 26, 2018, the Company and PFG agreed to eliminate the cash put provision contained in warrants in exchange for the Company issuing 150,000 shares of the Company's common stock. Upon removal of the put, the warrants were re-valued using the Black-Scholes option-pricing model with the following assumptions: (i) remaining term of 0.96 years, (ii) expected volatility of 85%, (iii) risk-free interest rate of 2.12%, and (iv) no expected dividends. The resulting change in fair value of the warrants, along with the fair value of the common stock issued to PFG, was recognized as an adjustment of warrant liability in the consolidated statements of operations.

There were no assets measured at fair value on a recurring basis and there were no assets or liabilities measured on a non-recurring basis at March 30, 2019 and March 31, 2018.

## **8 Sale of Product Line**

During the fourth quarter of fiscal 2016, the Company received \$375,000 from Spanawave under an Asset Purchase Agreement providing for the sale of certain of the Company's legacy product lines. In the first quarter of fiscal 2017, the Company received an additional \$375,000 from Spanawave under the agreement, for a combined total of \$750,000. Of this amount, the Company returned \$375,000 to Spanawave on July 28, 2016 resulting from the dispute regarding the status of the transfer of certain product lines under the agreement. The remaining \$375,000 was included in deferred liability related to asset sales in the consolidated balance sheet during the dispute. However, as a result of the settlement of the dispute in fiscal 2018, the Company recognized a net gain of \$324,000, which is net of approximately \$51,000 in expenses associated with the Spanawave asset sale. During the fiscal years ended March 30, 2019 and March 31, 2018, these product lines accounted for approximately zero in revenue.

## **9 Selling and Advertising Expenses**

Selling expenses consist primarily of salaries to employees and commissions paid to various sales representatives and marketing agencies. Commission expense totaled \$33,000 and \$43,000 for fiscal 2019 and 2018, respectively. Advertising costs, which are expensed as incurred, totaled zero and \$23,000 for fiscal 2019 and 2018, respectively.

## **10 Significant Customers and Industry Segment Information**

The Company has two reportable segments: Microsource and the Giga-tronics Division. Microsource's primary business is the design of custom Microwave Integrated Components as well as the production of MIC components using chip and wire assembly methods. Our Microsource Division offers a line of tunable, synthesized Band Reject Filters (BRF) for solving interference problems in RADAR/EW applications. Self-protection systems onboard high performance military aircraft often require RADAR filters to block electromagnetic interference generated by other onboard electronic systems, particularly the aircraft's main RADAR. These high-speed, tunable notch filters can quickly block interference from both continuous wave and wide bandwidth emissions. Using proprietary driver and phase lock technology, these filters offer tuning speeds that are up to ten times faster than traditional filter designs. We design these filters specifically for each application. Microsource's two largest customers are prime contractors for which it develops and manufactures RADAR filters used in fighter jet aircraft.

The Giga-tronics Division designs, manufactures and markets a family of functional test products for the RADAR and Electronic Warfare (RADAR/EW) segment of the defense electronics market. Our RADAR/EW test products are used to evaluate and improve the performance of RADAR/EW systems.

The accounting policies for the segments are the same as those described in the "Summary of Significant Accounting Policies". The Company evaluates the performance of its segments and allocates resources to them based on earnings before income taxes. Segment net sales include sales to external customers. Inter-segment activities are eliminated in consolidation. Assets include accounts receivable, inventories, equipment, cash, deferred income taxes, prepaid expenses and other long-term assets. The Company accounts for inter-segment sales and transfers at terms that allow a reasonable profit to the seller. During the periods reported there were no significant inter-segment sales or transfers.

The Company's reportable operating segments are strategic business units that offer different products and services. They are managed separately because each business utilizes different technology and requires different accounting systems. The Company's chief operating decision maker is considered to be the Company's Chief Executive Officer ("CEO"). The CEO reviews financial information presented on a consolidated basis accompanied by disaggregated information about revenues and pre-tax income or loss by operating segment.

The tables below present information for the fiscal years ended 2019 and 2018.

<b>March 30, 2019 (Dollars in thousands)</b>	<b>Giga-tronics</b>		<b>Microsource</b>	<b>Total</b>		
	<b>Division</b>					
Revenue	\$	1,935	\$	9,213	\$	11,148
Interest expense, net		(713)		—		(713)
Depreciation and amortization		257		7		264
Income/(loss) before income taxes		(4,627)		3,626		(1,001)
Assets		3,979		2,300		6,279

<b>March 31, 2018 (Dollars in thousands)</b>	<b>Giga-tronics</b>		<b>Microsource</b>	<b>Total</b>
	<b>Division</b>			
Revenue	\$ 2,737	\$ 7,063	\$ 9,800	
Interest expense, net	(461)	—	(461)	
Depreciation and amortization	1,116	1	1,117	
Capital expenditures	(688)	—	(688)	
Income/(loss) before income taxes	(5,847)	2,748	(3,099)	
Assets	5,253	3,178	8,431	

The Company's Giga-tronics Division and Microsource segments sell to agencies of the U.S. government and U.S. defense-related customers. In fiscal 2019 and 2018, U.S. government and U.S. defense-related customers accounted for 97% and 88% of sales, respectively. During fiscal 2019, the Boeing Company accounted for 57% of the Company's consolidated revenues and was included in the Microsource segment. A second customer, Lockheed Martin Corporation accounted for 26% of the Company's consolidated revenues during fiscal 2019 and was also included in the Microsource segment.

During fiscal 2018, the Boeing Company accounted for 29% of the Company's consolidated revenues and was included in the Microsource segment. A second customer, CSRA LLC (CSRA acted as Prime Contractor for the United States Navy) accounted for 20% of the Company's consolidated revenues during fiscal 2018 and was included in the Giga-tronics Division reporting segment. A third customer, Lockheed Martin accounted for 41% of the Company's revenue and was included in the Microsource segment.

Export sales accounted for 1% and 8% of the Company's sales in fiscal 2019 and 2018, respectively. Export sales by geographical area for these fiscal years are shown below:

<b>(Dollars in thousands)</b>	<b>March 30,</b>		<b>March 31,</b>	
	<b>2019</b>		<b>2018</b>	
Europe	\$ 14	\$ 40		
Asia	12	—		
Rest of world	68	702		
Total	\$ 94	\$ 742		

#### **11 Loss per Common Share**

The stock options, restricted stock, convertible preferred stock and warrants not included in the computation of diluted earnings per share (EPS) for the fiscal years ended March 30, 2019 and March 31, 2018 is a result of the Company's net loss and, therefore, the effect of these instruments would be anti-dilutive.

Stock options not included in computation that could potentially dilute EPS in the future	2,735	1,479
Restricted stock awards not included in computation that could potentially dilute EPS in the future	335	300
Convertible preferred stock not included in computation that could potentially dilute EPS in the future	11,693	1,858
Warrants not included in computation that could potentially dilute EPS in the future	3,452	3,960
	<u>18,215</u>	<u>7,597</u>

## 12 Income Taxes

Following are the components of the provision for income taxes for fiscal years ended:

(in thousands)	March 30, 2019	March 31, 2018
<b>Current</b>		
Federal	\$ —	\$ —
State	42	2
	<u>42</u>	<u>2</u>
<b>Deferred</b>		
Federal	2	5,547
State	39	(393)
	<u>41</u>	<u>5,154</u>
Change in liability for uncertain tax positions	1	2
Change in valuation allowance	(42)	(5,156)
Provision for income taxes	<u>\$ 42</u>	<u>\$ 2</u>

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets are as follows:

Fiscal years ended (In thousands)	March 30, 2019	March 31, 2018
Net operating loss carryforwards	\$ 11,365	\$ 11,472
Income tax credits	349	347
Inventory reserves and additional costs capitalized	795	787
Accrued vacation	49	40
Deferred rent	21	136
Non-qualified stock options and restricted stock	81	2
Other	159	77
Total deferred tax assets	<u>12,819</u>	<u>12,861</u>
Valuation allowance	(12,819)	(12,861)
Net deferred tax assets	<u>\$ —</u>	<u>\$ —</u>

The following summarizes the difference between the income tax expense and the amount computed by applying the statutory federal income tax rates of 21% and 31.55%, respectively, for the years ended March 30, 2019 and March 31, 2018, to income before income tax. The items comprising these differences consisted of the following for the fiscal years ended March 30, 2019 and March 31, 2018:

Fiscal years ended (In thousands except percentages)	March 30, 2019		March 31, 2018	
Statutory federal income tax (benefit)	\$ (210)	21%	\$ (955)	31.6%
Valuation allowance	(42)	4.2	(5,156)	170.1
Effect of reduced corporate tax rates	—	—	6,207	(205.3)
State income tax, net of federal benefit	(70)	7.0	(177)	5.9
Net operating loss expiration	39	(3.9)	—	—
Non-tax deductible expenses	(15)	1.5	46	(1.5)
Tax credits	(2)	0.2	(4)	0.1
Adoption of ASC 606 adjustment	329	(32.9)	—	—
Other	13	(1.3)	41	(0.9)
Effective income tax	<u>\$ 42</u>	<u>(4.2)%</u>	<u>\$ 2</u>	<u>—</u>

The decrease in the valuation allowance from March 30, 2019 to March 31, 2018 was \$42,000.

As of March 30, 2019, the Company had pre-tax federal net operating loss carryforwards of \$46,297,000 and state net operating loss carryforwards of \$23,523,000 available to reduce future taxable income. The federal and state net operating loss carryforwards begin to expire from fiscal 2022 through 2038 and from 2029 through 2039, respectively. Utilization of net operating loss carryforwards may be subject to annual limitations due to certain ownership change limitations as required by Internal Revenue Code Section 382. In addition, the Tax Cuts and Jobs Act of 2017 imposes new limitations on the utilization of losses incurred in tax years beginning after December 31, 2017. The federal income tax credits begin to expire from 2032 through 2037 and state income tax credit carryforwards are carried forward indefinitely.

The Company has recorded a valuation allowance to reflect the estimated amount of deferred tax assets, which may not be realized. The ultimate realization of deferred tax assets is dependent upon generation of future taxable income during the periods in which those temporary differences become deductible. Management considers both positive and negative evidence and tax planning strategies in making this assessment.

As of March 30, 2019, the Company recorded unrecognized tax benefits of \$123,000 related to uncertain tax positions. The unrecognized tax benefit is netted against the non-current deferred tax asset on the consolidated balance sheet. The Company has not recorded a liability for any penalties or interest related to the unrecognized tax benefits.

The Company files U.S. federal and California state tax returns. The Company is generally no longer subject to tax examinations for years prior to fiscal year 2014 for federal purposes and fiscal year 2013 for California purposes, except in certain limited circumstances.

In November 2018, the Franchise Tax Board (“FTB”) issued their final bill regarding their audit findings related to the tax year ending in 2011 disallowing R&D credits. As a result, the Company adjusted the accrued state tax liability along with the accrued interest to \$110,000. The Company has an agreement with the FTB to pay the balance over six months.

A reconciliation of the beginning and ending amount of the liability for uncertain tax positions, excluding potential interest and penalties, is as follows:

(In thousands)	Fiscal Years	
	2019	2018
Balance as of beginning of year	\$ 122	\$ 120
Additions based on current year tax positions	1	2
Balance as of end of year	\$ 123	\$ 122

The total amount of interest and penalties related to unrecognized tax benefits at March 30, 2019 is not material. The amount of tax benefits that would impact the effective rate, if recognized, is not expected to be material. The Company does not anticipate any significant changes with respect to unrecognized tax benefits within the next twelve (12) months.

### **13 Share-based Compensation and Employee Benefit Plans**

*Share-based Compensation* During September 2005, the Company established its 2005 Equity Incentive Plan, which provides for the granting of stock options and restricted stock for up to 2,850,000 shares of common stock at 100% of fair market value at the date of grant, with each grant requiring approval by the Board of Directors of the Company. In 2014, the term of the 2005 Equity Incentive Plan was extended to 2025. Options granted generally vest in one or more installments in a four or five year period and must be exercised while the grantee is employed by the Company or within a certain period after termination of employment (or while providing services under a service arrangement in the case of non-employees). Options granted to employees shall not have terms in excess of 10 years from the grant date. Holders of options may be granted stock appreciation rights (SAR), which entitle them to surrender outstanding options for a cash distribution under certain changes in ownership of the Company, as defined in the stock option plan. As of March 30, 2019, no SARs have been granted under the option plan. As of March 30, 2019, no further shares of common stock are available for issuance. All outstanding options have a ten-year life from the date of grant.

On September 20, 2018, our shareholders approved our new 2018 Equity Incentive Plan under which we may issue up to 2,500,000 shares of common stock upon the exercise of options, stock awards and grants. With the adoption of the 2018 Equity Incentive Plan, no further awards will be issued under the Company’s 2005 Equity Incentive Plan, though all awards under the 2005 Equity Incentive Plan that are outstanding will continue to be governed by the terms, conditions and procedures set forth in the plan and any applicable award agreement. Option grants under the Company’s 2000 Stock Option Plan are no longer available.

Options granted generally vest in one or more installments in a four or five-year period and must be exercised while the grantee is employed by the Company (or while providing services under a service arrangement in the case of non-employees) or within a certain period after termination of employment or service arrangement in the case of non-employees. Options granted to employees shall not have terms in excess of 10 years from the grant date. Holders of options may be granted SARs, which entitle them to surrender outstanding awards for a cash distribution under certain changes in ownership of the Company, as defined in the stock option plan. As of March 30, 2019, no SARs have been granted under any option plan. As of March 30, 2019, the total number of shares of common stock available for issuance was 1,686,000. All outstanding options have a ten-year life from the date of grant. The Company records compensation cost associated with share-based compensation equivalent to the estimated fair value of the awards over the requisite service period.

#### Stock Options

The weighted average grant date fair value of stock options granted during the fiscal years ended March 30, 2019 and March 31, 2018 was \$0.25 and \$0.93, respectively, and was calculated using the following weighted-average assumptions:

Fiscal years ended	March 30, 2019	March 31, 2018
Dividend yield	—	—
Expected volatility	96%	91%
Risk-free interest rate	2.79%	2.40%
Expected term (years)	8.35	8.35

A summary of the changes in stock options outstanding for the fiscal years ended March 30, 2019 and March 31, 2018 is presented below:

(Dollars in thousands except share prices)	Shares	Weighted Average Exercise Price per share	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding at March 25, 2017	1,104,500	\$ 1.41	6.1	\$ 3
Granted	856,000	0.34	10.0	—
Forfeited / Expired	(481,800)	1.34	—	—
Outstanding at March 31, 2018	1,478,700	\$ 0.56	8.0	\$ —
Granted	1,504,000	0.31	9.6	—
Forfeited / Expired	(248,000)	0.69	—	—
Outstanding at March 30, 2019	2,734,700	\$ 0.41	8.4	\$ —
Exercisable at March 30, 2019	662,300	\$ 0.66	5.1	\$ —
At March 30, 2019, expected to vest in the future	1,489,178	\$ 0.33	9.4	\$ —

As of March 30, 2019, there was \$362,000 of total unrecognized compensation cost related to non-vested options granted under the 2005 and 2018 Plans and outside of the Plans. That cost is expected to be recognized over a weighted average period of 3.3 years and will be adjusted for subsequent changes in estimated forfeitures. There were 211,400 and 143,900 options vested during the fiscal years ended March 30, 2019 and March 31, 2018, respectively. The total fair value of options vested during the fiscal years ended March 30, 2019 and March 31, 2018 was \$90,000 and \$163,000, respectively. There were no exercises in fiscal 2019 and 2018. Share based compensation cost recognized in operating results for the fiscal years ended March 30, 2019 and March 31, 2018 totaled \$121,000 and \$144,000, respectively.

#### Restricted Stock

The Company granted 310,000 restricted awards during the fiscal year ended March 30, 2019. The Company granted 586,950 restricted awards during fiscal 2018. The restricted stock awards are considered fixed awards as the number of shares and fair value at the grant date are amortized over the requisite service period net of estimated forfeitures. As of March 30, 2019, there was \$111,000 of total unrecognized compensation cost related to non-vested awards. That cost is expected to be recognized over a weighted average period of 0.997 years and will be adjusted for subsequent changes in estimated forfeitures. Compensation cost recognized for restricted and unrestricted stock for fiscal 2019 and fiscal 2018 totaled \$125,000 and \$107,000, respectively.

A summary of the changes in non-vested restricted stock awards outstanding for the fiscal years ended March 30, 2019 and March 31, 2018 is presented below:

	Shares	Weighted Average Grant Date Fair Value
Non-vested at March 25, 2017	—	\$ —
Granted	586,950	0.66
Vested	(51,000)	(0.60)
Forfeited or cancelled	(236,000)	(0.68)
Non-vested at March 31, 2018	299,950	\$ 0.65
Granted	310,000	0.31
Vested	(250,000)	0.32
Forfeited or cancelled	(25,000)	0.79
Non-vested at March 30, 2019	334,950	\$ 0.56

*401(k) Plan* The Company has established a 401(k) plan which cover substantially all employees. Participants may make voluntary contributions to the plan for up to 100% of their defined compensation. The Company matches a percentage of the participant's contributions in accordance with the plan. Participants vest ratably in Company contributions over a four- year period. Company contributions to the plan for fiscal 2019 and 2018 were approximately \$18,000 and \$27,000, respectively.

#### 14 Commitments and Contingencies

The Company leased a 47,300 square foot facility located in San Ramon, California that expired in April 2017. On January 5, 2017, the Company entered a seventy-seven-month commercial building lease agreement for a 23,873 square feet facility in Dublin, California. The new lease began on April 1, 2017. The Company's principal executive offices along with our marketing, sales, and engineering offices and manufacturing operations were in the Dublin facility as of March 30, 2019.

The Company also leased a 1,200 square foot facility for certain engineering personnel located in Nashua, New Hampshire, which we leased on February 1, 2019 under a lease agreement which expires on January 31, 2022.

The Company also leases certain other equipment under operating leases.

Total future minimum lease payments under the building leases and certain equipment are as follows.

Fiscal year (Dollars in thousands)		
2020	\$	468
2021		479
2022		479
2023		487
Thereafter		209
Total	\$	2,122

The aggregate rental expense was \$374,000 and \$460,000 in fiscal 2019 and 2018, respectively.

The Company leases certain equipment under capital leases that expire through May 2021. Capital leases with costs totaling \$249,000 and \$249,000 are reported net of accumulated depreciation of \$228,000 and \$174,000 at March 30, 2019 and March 31, 2018, respectively.

Total future minimum lease payments under these capital leases are as follows.

Fiscal year (Dollars in thousands)	Principal		Interest		Total
2020	\$	41	\$	5	\$ 46
2021		23		1	24
Total	\$	64	\$	6	\$ 70

The Company is committed to purchase certain inventory under non-cancelable purchase orders. As of March 30, 2019, total non-cancelable purchase orders were approximately \$1,260,000 and are scheduled to be delivered to the Company at various dates through March 2019.



## 15 Warranty Obligations

The Company records a liability in cost of sales for estimated warranty obligations at the date products are sold. Adjustments are made as new information becomes available. The following provides a reconciliation of changes in the Company's warranty reserve. The Company provides no other guarantees.

(In thousands)		March 30, 2019	March 31, 2018
Balance as of beginning of year	\$	164	\$ 123
Provision, net		(7)	291
Warranty costs incurred		(53)	(250)
Balance as of end of year	\$	104	\$ 164

## 16 Private Placement Offering

On January 19, 2016, the Company entered into a Securities Purchase Agreement for the sale of 2,787,872 Units, each consisting of one share of common stock and a warrant to purchase 0.75 shares of common stock, to approximately 20 private investors. The purchase price for each Unit was \$1.24375. Gross proceeds were approximately \$3.5 million. Net proceeds to the Company after fees was approximately \$3.1 million. The portion of the purchase price attributable to the common shares included in each Unit was \$1.15, the consolidated closing bid price for the Company's common stock on January 15, 2016. The warrant price was \$.09375 per Unit (equivalent to \$0.125 per whole warrant share), with an exercise price of \$1.15 per share. The term of the warrants is five years from the date of completion of the transaction. Emerging Growth Equities, Ltd also received warrants to purchase 292,727 shares of common stock at an exercise price of \$1.15 per share as part of its consideration for serving as placement agent in connection with the private placement.

## 17 Preferred Stock and Warrants

### Series E Senior Convertible Voting Perpetual Preferred Stock

On March 26, 2018, the Company entered into a Securities Purchase Agreement for the sale of 43,800 shares of a newly designated series of 6.0% Series E Senior Convertible Voting Perpetual Preferred Stock ("Series E Shares") to approximately 15 private investors. The sale was completed and the Series E Shares were issued on March 28, 2018.

The purchase price for each Series E Share was \$25.00. Gross proceeds received by the Company were approximately \$1.095 million (the "Placement"). Net proceeds to the Company after fees and expenses of the Placement were approximately \$1.0 million. Placement agent fees incurred in connection with the transaction were 5% of gross proceeds or approximately \$57,000 in cash, plus warrants to purchase 5% of the number of common shares into which the Series E shares can be converted (223,000 shares) at an exercise price of \$0.25 per share.

Each Series E Share is initially convertible (at the option of the holder) at a conversion price of \$0.25 per share of common stock, representing 100 shares of the Company's common stock per each Series E Share. The conversion ratio is subject to adjustments for stock splits, stock dividends, recapitalizations and similar transactions. As of March 31, 2018, if all 43,800 issued Series E Shares were immediately converted, holders of such shares would acquire 4,380,000 shares of common stock of the Company, or 31% of the pro forma number of shares of common stock that would be outstanding if the conversion had occurred on this date, 27% of the pro forma number of shares of common stock that would be outstanding upon the conversion of the Company's outstanding shares of Series B, Series C and Series D Convertible Preferred Stock (collectively, the "Previously Issued Preferred Shares") and 22% of the pro forma number of shares of common stock that would be outstanding if all shares of preferred stock were converted and all warrants exercised as of this date. The Company is entitled to redeem Series E Shares at a price equal to 300% of the Series E Share purchase price, or \$75.00 per share, subject to potential adjustment, but the right to redeem is subject to satisfaction of certain conditions related to the market price and trading volume of the Company's common stock.

Each Series E Share has a liquidation preference of 150% of the purchase price or \$37.50, subject to adjustment. In the event of any liquidation, dissolution or winding up of the affairs of the Company, whether voluntary or involuntary, a merger, or a sale of the Company's MSI business line or Simulation and Electronics Warfare business line or their related assets, before any payment or distribution to holders of junior shares (including common stock and Previously Issued Preferred Stock), holders of Series E Shares will be entitled to receive an amount of cash per share of Series E Shares up to the liquidation preference plus all accumulated accrued and unpaid dividends thereon. Upon a sale of the Company's MSI business line or Simulation and Electronics Warfare business line or their related assets, holders of Series E Shares shall be entitled to receive a pro rata portion of the net sale proceeds after reasonable transaction expenses and amount payable to the Company's secured creditors for releases of their liens on such assets, up to the liquidation preference plus accrued and unpaid dividends. If the payment per Series E Shares is less than the Series E Shares' liquidation preference, the liquidation preference and the Series E Share redemption price will be reduced by the amount of the payment received.

Holders of Series E Shares are entitled to receive, when, as and if declared by the Company's Board of Directors, cumulative preferential dividends, payable semiannual in cash at a rate per annum equal to 6.0% of the initial purchase price of \$25.00 per share or in-kind (at the Company's election) through the issuance of shares of the Company's common stock, based on the 10 day volume weighted average price of the common stock.

Holders of Series E Shares generally vote together with the common stock on an as-converted basis on each matter submitted to the vote or approval of the holders of common stock, and vote as a separate class with respect to certain actions that adversely affect the rights of the holders of Series E Shares and on other matters as required by law. In addition, the approval of the Holders of the Series E shares is generally required prior to the Company's issuance of any securities having rights senior to or in parity with the Series E Shares with respect to dividends or liquidation preferences. The Series E Shares' right to approve parity securities will terminate at such time that (1) fewer than 22,300 Series E Shares, which is 50% of the number of Series E Shares first issued, remain outstanding or (2) the volume weighted average closing price of the Company's common stock for any 20 trading days within any 30 trading day period is \$0.75 or more, the average daily trading volume over such 30 trading day period is 100,000 shares or more and there is either an effective registration statement covering resale of the shares of common stock that holders of Series E Shares would be entitled to receive upon conversion and any shares received as pay-in-kind dividends, or such share could be freely sold pursuant to Rule 144 under the Securities Act of 1933, as amended.

The Company and each Series E investor entered into an Investor Rights Agreement. Under this agreement, the Company agreed to, among other things, use best efforts to file certain registration statements for the resale of common stock of the Company that the investor may acquire upon conversion of the Series E Shares and may potentially receive as payment-in-kind dividends during the two years following the date of the agreement. The Company also agreed that it would not issue additional debt without the approval by holders of at least 66.6% of the Series E Shares, other than trade debt incurred in the normal course and commercial bank working capital debt, whether revolving or term debt. Concurrent with the execution of the Securities Purchase Agreement for the Series E Shares, the Company and PFG entered into a modification agreement providing for the restructuring of certain terms associated with approximately \$1.7 million in indebtedness owed to PFG (see Note 6 – Term Loan and Warrants).

In connection with the sale of Series E Shares, the Company agreed to reduce the exercise price of certain warrants issued in connection with the Company's private placement in January 2016 (see Note 16 – Private Placement Offering), in which the Company sold (in part) 2,787,872 warrants (a "2016 Warrant"). Each 2016 Warrant entitled the holder to purchase 0.75 shares of the Company's common stock at the price of \$1.15 per whole share. The Company agreed to reduce the exercise price of 2016 Warrants that are held by the 2016 Investors purchasing Series E Shares from \$1.15 to \$0.25 per share as follows: A 2016 Investor purchasing an amount equal to or exceeding the lesser of \$200,000 or 50% of the amount it invested in the 2016 Private Placement will have the exercise price of all of its 2016 Warrants reduced to \$0.25, and 2016 Investors purchasing less than the lesser of \$200,000 or 50% of the amount it invested in the January 2016 Private Placement will have the exercise price of a ratable percentage of the 2016 Warrants reduced to \$0.25. In connection with its sale of the Series E Shares, the Company reduced the exercise price of 1,759,268 of the outstanding 2016 Warrants to \$0.25.

The fair value attributable to re-pricing the 2016 Warrants, provided to the participating 2016 Investors, of approximately \$203,000, was deducted from the Series E gross proceeds to arrive at the initial discounted carrying value of the Series E Shares. The initial discounted carrying value resulted in recognition of a beneficial conversion feature of approximately \$557,000, further reducing the initial carrying value of the Series E Shares. The discount to the aggregate stated value of the Series E Shares, resulting from recognition of the beneficial conversion feature, was immediately accreted as a reduction of common stock and an increase in the carrying value of the Series E Shares. The accretion is presented as a deemed dividend in the consolidated statements of operations.

In addition, warrants to purchase 292,727 shares of common stock held by the placement agent, as a result of a prior transaction, were amended to reduce the exercise price from \$1.15 per share to \$0.25 per share. The fair value attributable to re-pricing the placement agent warrants of approximately \$53,000 was recognized as additional Series E issuance costs and recognized net in the carrying value of Series E Shares.

During the fiscal year ended March 30, 2019, the Company issued an additional 56,200 Series E shares to new investors at a purchase price of \$25.00 per share for total gross proceeds of \$1,405,000. Each Series E Share is initially convertible (at the option of the holder) at a conversion price of \$0.25 per share of common stock, representing 100 shares of the Company's common stock per each Series E Share. As of March 30, 2019, 1,600 issued Series E Shares were converted at the request of the holders and the Company had issued an aggregate of 160,000 common stock upon conversion.

#### **Series B, C, D Convertible Voting Perpetual Preferred Stock and Warrants**

On November 10, 2011, the Company received \$2,199,000 in cash proceeds from Alara Capital AVI II, LLC, a Delaware limited liability company (the "Investor"), an investment vehicle sponsored by Active Value Investors, LLC, under a Securities Purchase Agreement entered into on October 31, 2011. Under the terms of the Securities Purchase Agreement, the Company issued 9,997 shares of its Series B Convertible Voting Perpetual Preferred Stock ("Series B Preferred Stock") to the Investor at a price of \$220 per share. The Company has recorded \$2.0 million as Series B Preferred Stock on the consolidated balance sheet which is net of stock offering costs of approximately \$202,000 and represents the value attributable to both the convertible preferred stock and warrants issued to the Investor. After considering the value of the warrants, the effective conversion price of the preferred stock was greater than the common stock price on date of issue and therefore no beneficial conversion feature was present.

On February 19, 2013, the Company entered into a Securities Purchase Agreement pursuant to which it agreed to sell 3,424.65 shares of its Series C Convertible Voting Perpetual Preferred Stock ("Series C Preferred Stock") to the Investor, for aggregate consideration of \$500,000, which is approximately \$146.00 per share. The Company has recorded \$457,000 as Series C Preferred Stock on the consolidated balance sheet, which is net of stock offering costs of approximately \$43,000. As part of this transaction, the Company and the Investor agreed to reduce the number of shares exercisable under the previously issued warrant, and after considering the reduction in the value of the warrant, the effective conversion price of the preferred stock was greater than the common stock price on the date of issue and therefore no beneficial conversion feature was present.

On July 8, 2013 the Company received \$817,000 in net cash proceeds from the Investor under a Securities Purchase Agreement. The Company sold to the Investor 5,111.86 shares of its Series D Convertible Voting Perpetual Preferred Stock (Series D Preferred Stock) and a warrant to purchase up to 511,186 additional shares of common stock at the price of \$1.43 per share. The allocation of the \$858,000 in gross proceeds from issuance of Series D Preferred Stock based on the relative fair values resulted in an allocation of \$498,000 (which was recorded net of \$41,000 of issuance costs) to Series D Preferred Stock and \$360,000 to Common Stock. In addition, because the effective conversion rate based on the \$498,000 allocated to Series D Preferred Stock was \$0.97 per common share which was less than the Company's stock price on the date of issuance, a beneficial conversion feature was present at the issuance date. The beneficial conversion feature totaled \$238,000 and was recorded as a reduction of common stock and an increase to accumulated deficit.

Each share of Series B, Series C and Series D Preferred Stock is convertible into one hundred shares of the Company's common stock. In connection with the preferred stock issuance described above, the Company issued to the investor warrants to purchase a total of 1,017,405 common shares at an exercise price of \$1.43 per share. These warrants were exercised in February 2015, and May 2015. The Company received funds from Alara in separate closings dated February 16, 2015 and February 23, 2015. Alara exercised a total of 1,002,818 of its existing Series C and Series D warrants to purchase common shares, all of which had an exercise price of \$1.43 per share for total cash proceeds of \$1,434,000, which was recorded net of \$42,000 of stock issuance costs. As part of the consideration for this exercise, the Company sold to Alara two new warrants to purchase an additional 898,634 and 194,437 common shares at an exercise price of \$1.78 and \$1.76 per share, respectively, for a total purchase price of \$137,000 or \$0.125 per share. The new warrants have a term of five years and may be paid in cash or through a cashless net share settlement. The Company and Alara amended the remaining 14,587 warrants as part of the February closings. On May 14, 2015, Alara exercised the remaining 14,587 warrants by acquiring 7,216 of shares of the Company's common stock through a cashless net share settlement.

On December 31, 2018, Alara Capital AVI II, LLC effected an in-kind distribution, without consideration, of all of its shares of common stock, convertible preferred stock and warrants of Giga-tronics Incorporated ("Issuer") to its limited partners of their respective interests of the Company's securities held by Alara Capital AVI II, LLC in connection with the wind-up and dissolution of Alara Capital AVI II, LLC. As a result, Alara Capital AVI II, LLC no longer beneficially owns more than 5% of the common stock.

The table below presents information for the fiscal years ended March 30, 2019 and March 31, 2018:

Preferred Stock

As of March 30, 2019 and March 31, 2018

	Designated Shares	Shares Issued	Shares Outstanding	Liquidation Preference (in thousands)
Series B	10,000.00	9,997.00	9,997.00	\$ 2,309
Series C	3,500.00	3,424.65	3,424.65	500
Series D	6,000.00	5,111.86	5,111.86	731
Series E	60,000.00	43,800.00	43,800.00	1,643
Total at March 31, 2018	79,500.00	62,333.51	62,333.51	\$ 5,183
Series E	40,000.00	56,200.00	54,600.00	2,047
Total at March 30, 2019	119,500.00	118,533.51	116,933.51	\$ 7,230

**18 Subsequent Events**

None.

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and  
Shareholders of Giga-tronics Incorporated  
Dublin, California

### Opinion on the Financial Statements

We have audited the accompanying balance sheets of Giga-tronics Incorporated and subsidiary (collectively the "Company") as of March 30, 2019 and March 31, 2018, and the related consolidated statements of operations, shareholders' equity, and cash flows for each of the two years in the period ended March 30, 2019, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of March 30, 2019 and March 31, 2018, and the consolidated results of its operations and its cash flows for each of the two years in the two-year period ended March 30, 2019, in conformity with U.S. generally accepted accounting principles.

### 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 the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. 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.

We have served as the Company's auditor since 2018.

/s/ Armanino LLP  
San Ramon, California

May 30, 2019

## ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

None.

### ITEM 9A. CONTROLS AND PROCEDURES

#### Disclosure Controls and Procedures

The Company maintains disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 as amended (the “Exchange Act”)) that are designed to ensure that information required to be disclosed in the Company’s reports under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to management, including the Company’s Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. The Company periodically reviews the design and effectiveness of its disclosure controls and internal control over financial reporting. The Company makes modifications to improve the design and effectiveness of its disclosure controls and internal control structure, and may take other corrective action, if its reviews identify a need for such modifications or actions. The Company’s disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives.

As of the end of the period covered by this Form 10-K, an evaluation was completed under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, regarding the design and effectiveness of our disclosure controls and procedures. Based on this evaluation, our management, including our principal executive officer and principal financial officer, has concluded that our disclosure controls and procedures were effective as of March 30, 2019.

#### Report of Management on Internal Control over Financial Reporting

Management of Giga-tronics is responsible for establishing and maintaining adequate internal control over financial reporting for the Company, as such term is defined in Rule 13a-15(f) under the Securities Exchange Act of 1934. The Company’s management, under the supervision of the Chief Executive Officer and Chief Financial Officer, has assessed the effectiveness of the Company’s internal control over financial reporting as of March 30, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in its 2013 Internal Control-Integrated Framework. Our internal control over financial reporting includes policies and procedures designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with United States generally accepted accounting principles and that:

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

Based on the above described procedures and actions taken, the Company’s management, including the Chief Executive Officer and Chief Financial Officer have concluded that as of March 30, 2019, the Company’s internal control over financial reporting was effective based on the criteria described in the 2013 “COSO Internal Control – Integrated Framework.”

Management's assessment of the effectiveness of the Company's internal control over financial reporting as of March 30, 2019, has not been audited by the Company's independent registered public accounting firm. Management's report is not subject to attestation by the Company's independent registered public accounting firm pursuant to the rules of the Securities and Exchange Commission that permit the Company to provide only management's report in this Annual Report.

**Changes in Internal Control**

There were no changes in the Company's internal control over financial reporting (as defined in Rules 13a-15(f) and 15d- 15(f) under the Exchange Act) during the fiscal quarter ended March 30, 2019, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

**ITEM 9B. OTHER INFORMATION**

None.

**PART III**

**ITEM 10. DIRECTOR, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

Information regarding the directors, executive officers and corporate governance of the Company is incorporated by reference to the Company's Proxy Statement for its 2019 Annual Meeting of Shareholders, to be filed no later than 120 days after the close of the fiscal year ended March 30, 2019.

We have adopted a code of ethics that applies to our directors, our chief executive officer, our senior financial officers and our other officers and employees. The code of ethics is posted on our website under the Governance portion of the Investor Relations section at <https://investor.gigatronics.com/governance-docs>.

**ITEM 11. EXECUTIVE COMPENSATION**

Information regarding the Company's compensation of its executive officers is incorporated herein by reference to the Company's Proxy Statement for its 2019 Annual Meeting of Shareholders, to be filed no later than 120 days after the close of the fiscal year ended March 30, 2019.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED SHAREHOLDER MATTERS**

Information regarding security ownership of certain beneficial owners and management and related shareholder matters is incorporated by reference to the Company's Proxy Statement for its 2019 Annual Meeting of Shareholders, to be filed no later than 120 days after the close of the fiscal year ended March 30, 2019.

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

Information concerning certain relationships, related transactions and director independence is incorporated herein by reference to the Company's Proxy Statement for its 2019 Annual Meeting of Shareholders, to be filed no later than 120 days after the close of the fiscal year ended March 30, 2019.

**ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

Information concerning the Company's principal accountants is incorporated by reference to the Company's Proxy Statement for its 2019 Annual Meeting of Shareholders, to be filed no later than 120 days after the close of the fiscal year ended March 30, 2019.



**PART IV**

**ITEM 15. EXHIBITS AND FINANCIAL STATEMENTS SCHEDULES**

(a) The following consolidated financial statements of Giga-tronics Incorporated and the related independent registered public accounting firm are filed herewith:

1. Financial Statements. See Index to Financial Statements on page 27. The financial statements and Report of Independent Registered Public Accounting Firm are included in Item 8 are filed as part of this report.
2. Exhibits. The exhibit list required by this item is incorporated by reference to the Exhibit Index filed with this report.

The following exhibits are filed by reference or herewith as a part of this report:

INDEX TO EXHIBITS

- 3.1 [Articles of Incorporation of the Company, as amended \(incorporated by reference to Exhibit 3.1 to the Company's Form 10-K for the fiscal year ended March 27, 1999\)](#)
- 3.2 [Certificate of Determination of Preferences of Preferred Stock Series A of the Company \(incorporated by reference to Exhibit 3.1 to the Company's Form 10-K for the fiscal year ended March 27, 1999\)](#)
- 3.3 [Certificate of Determination of Series B Convertible Voting Perpetual Preferred Stock of the Company \(incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed on November 14, 2011\)](#)
- 3.4 [Certificate of Determination of Series C Convertible Voting Perpetual Preferred Stock of the Company \(incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed on February 25, 2013\)](#)
- 3.5 [Certificate of Determination of Series D Convertible Voting Perpetual Preferred Stock of the Company \(incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed on July 3, 2013\)](#)
- 3.6 [Certificate of Determination of 6.0% Series E Senior Convertible Voting Perpetual Preferred Stock of the Company \(incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed on March 30, 2018\)](#)
- 3.7 [Certificate of Amendment to Certificate of Determination of 6.0% Series E Senior Convertible Voting Perpetual Preferred Stock of the Company \(incorporated by reference to Exhibit 3.2 to the Company's Form 8-K filed on August 20, 2018\)](#)
- 3.8 [Certificate of Amendment to Certificate of Determination of 6.0% Series E Senior Convertible Voting Perpetual Preferred Stock of the Company \(incorporated by reference to Exhibit 3.3 to the Company's Form 8-K filed on November 27, 2018\)](#)
- 3.9 [Amended and Restated Bylaws of the Company \(incorporated by reference to Exhibit 3.2 to the Company's Form 10-K for the fiscal year ended March 29, 2008\)](#)
- 10.1 [Form of Indemnification Agreement between the Company and each of its directors and officers \(incorporated by reference to Exhibit 10.1 to the Company's Form 10-K for the fiscal year ended March 27, 2010\)](#)
- 10.2 [2005 Equity Incentive Plan \(incorporated by reference to Attachment A to the Company's Proxy Statement on Form DEF 14A filed on July 21, 2005\) \\*](#)
- 10.3 [Second Amended and Restated Warrant between the Company and Partners for Growth IV, L.P. dated March 26, 2018](#)
- 10.4 [Second Amended and Restated Warrant between the Company and SVB Financial Group dated March 26, 2018](#)
- 10.5 [Second Amended and Restated Warrant between the Company and PFG Equity Investors, LLC dated March 26, 2018](#)
- 10.6 [Securities Purchase Agreement between the Company and Alara Capital AVI II, LLC dated June 27, 2013 \(incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on July 3, 2013\)](#)
- 10.7 [Securities Purchase Agreement between the Company and Alara Capital AVI II, LLC dated February 16, 2015 \(incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on February 20, 2015\)](#)
- 10.8 [Warrant to Purchase 898,634 Shares of Common Stock between the Company and Alara Capital AVI II, LLC dated February 16, 2015 \(incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on February 20, 2015\)](#)
- 10.9 [Warrant to Purchase 194,437 Shares of Common Stock between the Company and Alara Capital AVI II, LLC dated February 23, 2015 \(incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 27, 2015\)](#)
- 10.10 [Investor Rights Agreement between the Company and Alara Capital AVI II, LLC dated November 10, 2011 \(incorporated by reference to Exhibit 10.3 to the Company's Form 8-K filed on November 14, 2011\)](#)
- 10.11 [Investor Rights Agreement between the Company and Alara Capital AVI II, LLC dated July 8, 2013 \(incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed on July 12, 2013\)](#)
- 10.12 [Investor Rights Agreement between the Company and Alara Capital AVI II, LLC dated February 16, 2015 \(incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed on February 20, 2015\)](#)
- 10.13 [Amendment No. 1 to Securities Purchase Agreement and Investor Rights Agreement between the Company and Alara Capital AVI II, LLC dated February 23, 2015 \(incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on February 27, 2015\)](#)
- 10.14 [Severance Agreement between the Company and John R. Regazzi dated June 3, 2010 \(incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on August 9, 2010\) \\*](#)
- 10.15 [Severance Agreement between the Company and Tim Ursprung dated July 2, 2018 \\*](#)
- 10.16 [Severance Agreement between the Company and Traci Mitchell dated March 21, 2019 \(incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on March 26, 2019\) \\*](#)

- 10.17 [Severance Agreement between the Company and Armand Pantalone dated March 21, 2019 \(incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed on March 26, 2019\) \\*](#)
- 10.18 [Severance Agreement between the Company and Lutz Henckels dated April 11, 2019 \\*](#)
- 10.19 [Lease Agreement between the Company and SF II Creekside LLC dated January 5, 2017 \(incorporated by reference to Exhibit 10.17 to the Company's Form 10-K for the year ended March 31, 2018\).](#)
- 10.20 [Loan and Security Agreement between the Company and Partners for Growth V. L.P. dated April 27, 2017 \(incorporated by reference to Exhibit 10.18 to the Company's Form 10-K for the year ended March 31, 2018\).](#)
- 10.21 [Asset Purchase Agreement between the Company and Spanawave Corporation \(incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on February 8, 2016\).](#)
- 10.22 [Form of Securities Purchase Agreement dated January 19, 2016, between the Company and individual investors \(incorporated by reference to Exhibit 10.1 to the Company's Registration Statement on Form S-3 \(File No. 333-210157\) filed on March 14, 2016\).](#)
- 10.23 [Form of Warrant Agreement dated January 29, 2016, between the Company and individual investors \(incorporated by reference to Exhibit 10.2 to the Company's Registration Statement on Form S-3 \(File No. 333-210157\) filed on March 14, 2016\).](#)
- 10.24 [Investor Rights Agreement dated January 15, 2016, between the Company and individual investors \(incorporated by reference to Exhibit 10.22 to the Company's Form 10-K for the year ended March 31, 2018\)](#)
- 10.25 [Investor Rights Agreement dated March 26, 2018, between the Company and the investor parties thereto, \(incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed on March 30, 2018\)](#)
- 10.26 [Conditional Waiver and Modification to Loan and Security Agreement dated March 26, 2018 between the Company and Partners For Growth \(incorporated by reference to Exhibit 10.24 to the Company's Form 10-K for the year ended March 31, 2018\)](#)
- 10.27 [Modification No. 2 to Loan and Security Agreement dated December 12, 2018 between the Company and Partners for Growth V. L.P. \(incorporated by reference to Exhibit 10.3 to the Company's Form 8-K filed on December 21, 2018\)](#)
- 10.28 [Modification No. 3 to Loan and Security Agreement dated March 11, 2019 between the Company and Partners for Growth V. L.P. \(incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on March 14, 2019\)](#)
- 10.29 [Amended and Restated Business Financing Agreement between the Company, Microsource, Inc. and Western Alliance Bank \(incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed on March 14, 2019\)](#)
- 10.30 [Stock Option Award Agreement between the Company and Lutz Henckels dated June 6, 2018 \(incorporated by reference to Exhibit 10.25 to the Company's Form 10-K for the year ended March 31, 2018\)\\*](#)
- 10.31 [2018 Equity Incentive Plan \(incorporated by reference to Attachment A to the Company's Proxy Statement on Form DEF 14A filed on July 30, 2018\) \\*](#)
- 10.32 [Form of Option Agreement for Directors under 2018 Equity Incentive Plan \(incorporated by reference to Exhibit 10.1 of the Company's Form 8-K filed on February 6, 2019\)\\*](#)
- 10.33 [Form of Option Agreement for Certain Grants to Executive Officers under 2018 Equity Incentive Plan \(incorporated by reference to Exhibit 10.2 of the Company's Form 8-K filed on February 6, 2019\)\\*](#)
- 10.34 [Form of Option Agreement for Employees and Executive Officers \(incorporated by reference to Exhibit 10.3 of the Company's Form 8-K filed on February 6, 2019\)\\*](#)
- 16 [Letter from the Company's former certifying accountants dated January 9, 2018 \(incorporated by reference to Exhibit 16.1 to the Company's Form 8-K filed on January 9, 2018\)](#)
- 21 [Significant Subsidiaries \(incorporated by reference to Exhibit 20 to the Company's Form 10-K filed on June 19, 2018\)](#)
- 23.1 [Consent of Armanino LLP](#)
- 31.1 [Certification of Chief Executive Officer under Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- 31.2 [Certification of Principal Financial Officer under Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- 32.1 [Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 32.2 [Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)

101.INS**	XBRL Instance
101.SCH**	XBRL Taxonomy Extension Schema
101.CAL**	XBRL Taxonomy Extension Calculation
101.DEF**	XBRL Taxonomy Extension Definition
101.LAB**	XBRL Taxonomy Extension Labels
101.PRE**	XBRL Taxonomy Extension Presentation

\* Management contract or compensatory plan or arrangement.

\*\* XBRL information is furnished and not filed or a part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Act of 1933, as amended, is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, as amended, and otherwise is not subject to liability under these sections.

SIGNATURES

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

GIGA-TRONICS INCORPORATED

By: <u>/s/ JOHN R. REGAZZI</u>	<u>May 30, 2019</u>
Chief Executive Officer	Date

In accordance with the requirements of the Securities Exchange Act, this annual report on Form 10-K has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>/s/ WILLIAM J. THOMPSON</u> William J. Thompson	Chairman of the Board of Directors	<u>May 30, 2019</u> Date
<u>/s/ JOHN R. REGAZZI</u> John R. Regazzi	Chief Executive Officer and Director	<u>May 30, 2019</u> Date
<u>/s/ LUTZ P. HENCKELS</u> Lutz P. Henckels	Chief Financial Officer and Director (Principal Financial Officer)	<u>May 30, 2019</u> Date
<u>/s/ TRACI K. MITCHELL</u> Traci K. Mitchell	Corporate Controller (Principal Accounting Officer)	<u>May 30, 2019</u> Date
<u>/s/ GORDON L. ALMQUIST</u> Gordon L. Almquist	Director	<u>May 30, 2019</u> Date
<u>/s/ JAMIE WESTON</u> Jamie Weston	Director	<u>May 30, 2019</u> Date

**SECOND AMENDED AND RESTATED WARRANT**

THIS SECOND AMENDED AND RESTATED WARRANT ("WARRANT") WAS ORIGINALLY SOLD ON THE ISSUE DATE IN A PRIVATE TRANSACTION AND IS AMENDED AND RESTATED AS OF THE SECOND RESTATEMENT DATE, WITHOUT REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR THE SECURITIES LAWS OF ANY STATE, AND MAY BE OFFERED OR SOLD ONLY IF REGISTERED UNDER THE SECURITIES ACT AND SUCH LAWS OR IF AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT AND SUCH LAWS IS AVAILABLE.

Company / Issuer:	Giga-tronics Incorporated, a California corporation
Number of Shares:	156,000 shares, subject to adjustment
Class of Shares:	Common Stock, no par value / share
Exchange Price:	See Section 1.2
Issue Date:	March 13, 2014
Restatement Date:	June 16, 2014
2 <sup>nd</sup> Restatement Date:	March 26, 2018
Expiration Date:	March 13, 2020

The term "Holder" shall initially refer to Partners for Growth IV, L.P., a Delaware limited partnership, which is the initial holder of this Warrant and shall further refer to any subsequent permitted holder of this Warrant from time to time.

Giga-tronics Incorporated, a California corporation (the "Company") does hereby certify and agree that, for the sum of \$2,899 paid by Holder on the Issue Date, which the parties agree was fair consideration for this Warrant, Holder, or its permitted successors and assigns, hereby is entitled to Exercise or Exchange this Warrant (each as defined below) in the Company for up to One Hundred Fifty-Six (156,000) duly authorized, validly issued, fully paid and non-assessable shares of its Common Stock, no par value per share (the "Common Stock") upon the terms and subject to the provisions of this Warrant. The Common Stock issuable upon Exercise or Exchange of this Warrant is referred to herein as the "Warrant Stock". Capitalized terms used but not defined in this Warrant have their meanings as set forth in that certain Loan and Security Agreement of even date herewith between the Company and Holder (as amended, the "Loan Agreement"), regardless of whether the Loan Agreement is then in effect. When the term "convert" or "conversion" in relation to the Warrant is used herein, it includes an Exchange and an Exercise, each as defined below, as applicable.

**Section 1      Term, Price, Exercise and Exchange of Warrant.**

1.1 Term of Warrant. This Warrant shall be convertible from the Issue Date until the Expiration Date.

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1.2 Exchange Price. The price per share at which the Warrant Stock is issuable upon conversion of this Warrant shall be the lesser of (i) \$0.25 per share and (ii) the exercise price per share under those certain common stock warrants issued to investors as part of Units on or about January 29, 2016, as such exercise price is restated by agreement of the Company and such investors on or about the 2<sup>nd</sup> Restatement Date of this Warrant (the “Exchange Price”).

1.3 Exercise of Warrant; Exchange of Warrant.

(a) This Warrant may be Exercised (as defined below) in whole or in part, upon surrender of this Warrant to the Company at its then principal offices in the United States, together with the form of election to Exchange or Exercise attached hereto as Exhibit A (the “Election”) duly completed and executed with “Exercise” selected as the mode of conversion, and upon payment to the Company of the Exchange Price for the number of shares of Warrant Stock in respect of which this Warrant is then being converted (an “Exercise”). In lieu of an Exercise, Holder may exchange this Warrant in whole or in part on a cashless basis by indicating so in the Election and proceeding in accordance with the remainder of this Section 1.3 (an “Exchange”).

(b) Upon an Exchange, the Holder shall receive Warrant Stock such that, without the payment of any funds, the Holder shall surrender this Warrant in exchange for the number of shares of Warrant Stock equal to “X” (as defined below), computed using the following formula:

$$X = \frac{Y * (A-B)}{A}$$

Where

- X = the number of shares of Warrant Stock to be issued to Holder
- Y = the number of shares of Warrant Stock to be converted under this Warrant
- A = the Fair Market Value of one share of Warrant Stock
- B = the Exchange Price (as adjusted to the date of such calculations)
- \* = multiplied by

(c) For purposes of this Warrant, the “Fair Market Value” of one share of Warrant Stock shall be (i) if the Company’s Common Stock is becomes listed on a national stock exchange, the volume weighted average price per share reported on such exchange over the 30 trading-day period prior to the date Holder delivers its Election to the Company (the “30 Day VWAP”), or (ii) if the Common Stock is traded over-the-counter, the average of the bid and ask price for Common Stock over the 30 trading-day period prior to the date Holder delivers its Election to the Company. If another class or series of Company securities is listed or traded as aforesaid, the Fair Market Value shall be adjusted based on the ratio that the Warrant Stock converts into such other class or series or such other class or series converts into Warrant Stock, as appropriate. If the Common Stock is not traded as contemplated in clauses (i) or (ii), above, the Fair Market Value of the Company’s Warrant Stock shall be the price per share of Warrant Stock which the Company could obtain from a willing buyer of Warrant Stock sold by the Company from its authorized but unissued shares, initially as the Board of Directors of the Company (“Board”) shall determine in its reasonable good faith judgment, but in no event less than the price per share at which Common Stock (or options for Common Stock) are then issuable to Company employees based on a valuation compliant with Section 409A of the United States Internal Revenue Code; provided, however, if Holder disagrees the Fair Market Value of Warrant Stock as determined by the Board, the parties shall jointly engage a valuation expert to value the Warrant Stock based on a valuation of the Company as a going concern using standard valuation methodologies for the Warrant Stock. If the Warrant is to be converted in connection with an Acquisition, the Fair Market Value of a share of Warrant Stock shall be based on the enterprise value specified or implied in such Acquisition and shall be the greater of (A) the value attributable to the Warrant Stock and (B) the value attributable to the Company securities into which the Warrant Stock is (or may be) convertible (but subject to Holder’s conversion directly into such other Company securities).

(d) Upon surrender of this Warrant, and the duly completed and executed Election, and payment of the Exchange Price (if an Exercise) or conversion of this Warrant through Exchange, the Company shall promptly issue and deliver to the Holder or such other person as the Holder may designate in writing a certificate or certificates for the number of shares of Warrant Stock issuable pursuant to the terms of this Warrant upon conversion. Such certificate or certificates shall be deemed to have been issued and any person so designated to be named therein shall be deemed to have become a holder of record of such Warrant Stock as of the date of the surrender of this Warrant, and the duly completed and executed Election, and payment of the Exchange Price in the case of an Exercise or conversion of this Warrant through Exchange; provided, that if the date of surrender of this Warrant and payment of the Exchange Price is not a business day, the certificates for the Warrant Stock shall be deemed to have been issued as of the next business day (whether before or after the Expiration Date). If this Warrant is converted in part, a new warrant of the same tenor and for the number of shares of Warrant Stock not converted shall be executed by the Company and delivered to Holder.

1.4 Fractional Interests. The Company shall not be required to issue fractions of shares of Warrant Stock upon the conversion of this Warrant. If any fraction of a share of Warrant Stock would be issuable upon the exchange of this Warrant (or any portion thereof), the Company shall purchase such fraction for an amount in cash equal to the Fair Market Value of the Warrant Stock.

1.5 Automatic Exchange on Expiration Date. In the event that, by the Expiration Date, this Warrant has not been fully converted, then this Warrant shall be deemed Exchanged pursuant to Section 1.3 as to all Warrant Stock (or such other securities) for which it shall not previously have been converted, and the Company shall promptly deliver a certificate representing the Warrant Stock (or such other securities) issued upon such conversion to the Holder.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) “Acquisition”. For the purpose of this Warrant, “Acquisition” means any sale or other disposition of all or substantially all of the assets of the Company in whatever form, or any reorganization, consolidation, or merger of the Company (whether in a single transaction or multiple related transactions) where the holders of the Company’s securities before the transaction beneficially own less than 50% of the outstanding voting securities of the surviving entity after the transaction(s).

(b) Treatment of Warrant at Acquisition. Upon the closing of any Acquisition, at Holder’s option: (i) if the surviving entity (if applicable in such Acquisition) is willing assume the obligations of the Company under this Warrant, then if Holder so elects this Warrant shall be convertible into the same securities as would be payable for the Warrant Stock issuable upon conversion of the unconverted portion of this Warrant as if such Warrant Stock were outstanding on the record date for the Acquisition (and the Warrant Price and/or number of shares of Warrant Stock shall be adjusted accordingly); or (ii) the Company or other surviving entity in such Acquisition may (in lieu of assuming this Warrant under clause (i)) upon initial closing of such Acquisition purchase this Warrant at its “Fair Value” (the “Purchase Price”). For purposes hereof, “Fair Value” means that value determined by the parties using a Black-Scholes Option-Pricing Model (the “Black-Scholes Calculation”) with the following assumptions: (A) a risk-free interest rate equal to the risk-free interest rate at the time of the closing of the Acquisition (or as close thereto as practicable), (B) a contractual life of the Warrant equal to the remaining term of this Warrant as of the date of the announcement of the Acquisition, (C) an annual dividend yield equal to dividends declared on the underlying Warrant Stock (including securities into which the Warrant Stock may be convertible) during the term of this Warrant (calculated on an annual basis), and (D) a volatility factor of the expected market price of the Company’s Common Stock comprised of: (1) if the Company is publicly traded on a national securities exchange, its volatility over the one year period ending on the day prior to the announcement of the Acquisition, (2) if the Common Stock is traded over-the-counter, its volatility over the one year period ending on the day prior to the announcement of the Acquisition, or (3) if the Company is a non-public company, the volatility, over the one year period prior to the Acquisition, of an average of publicly-traded companies in the same or similar industry to the Company with such companies having similar revenues. The Purchase Price determined in accordance with the above shall be paid upon the initial closing of the Acquisition and shall not be subject to any post-Acquisition closing contingencies or adjustments; provided, however, the parties may take such post-Acquisition closing contingencies or adjustments into account in determining the Purchase Price, and if the parties take any post-Acquisition closing contingencies or adjustments into account, then upon the partial or complete removal of those post-Acquisition closing contingencies or adjustments, a new Black-Scholes Calculation would be made using all of the same inputs except for the value of the Company’s Common Stock (as determined under subclause (D)), and any increase in Fair Value (and, correspondingly, Purchase Price), including, without limitation, as a result of any earn-out or escrowed consideration, would be paid in full to Holder immediately after those post-Acquisition closing contingencies or adjustments can be determined or achieved.



**Section 2. Exchange and Transfer of Warrant.**

(a) This Warrant may be transferred, in whole or in part, without restriction, subject to (i) Holder's compliance with applicable securities laws (including, without limitation, the delivery of investment representation letters and legal opinions in legally sufficient and customary form), and (ii) the transferee holder of the new Warrant assuming in writing the obligations of the Holder and making the representations and warranties set forth in this Warrant. Notwithstanding and without the necessity of delivering an opinion of counsel, Holder may at any time transfer this Warrant in whole or in part to any affiliate. By its acceptance of this Warrant, each such affiliate transferee will be deemed to have made to the Company each of the representations and warranties set forth in Section 7 hereof and agrees to be bound by all of the terms and conditions of this Warrant as if the original Holder hereof. A transfer may be registered with the Company by submission to it of this Warrant, together with the Assignment Form attached hereto as Exhibit B duly completed and executed. After the Company's receipt of this Warrant and the Assignment Form so completed and executed, the Company will issue and deliver to the transferee a new warrant (representing the portion of this Warrant so transferred) at the same Exchange Price per share and otherwise having the same terms and provisions as this Warrant, which the Company will register in the new holder's name. In the event of a partial transfer of this Warrant, the Company shall concurrently issue and deliver to the transferring holder a new warrant that entitles the transferring holder to purchase the balance of this Warrant not so transferred and that otherwise is upon the same terms and conditions as this Warrant. Upon the due delivery of this Warrant for transfer, the transferee holder shall be deemed for all purposes to have become the holder of the new warrant issued for the portion of this Warrant so transferred, effective immediately prior to the close of business on the date of such delivery, irrespective of the date of actual delivery of the new warrant representing the portion of this Warrant so transferred. Notwithstanding any contrary provision herein, at all times prior to the IPO, Holder may not, without the Company's prior written consent, transfer this Warrant or any portion hereof, or any shares issued upon any exercise hereof to any person or entity who directly competes with the Company, except in connection with an Acquisition of the Company by such a direct competitor.

(b) In the event of the loss, theft or destruction of this Warrant, the Company shall execute and deliver an identical new warrant to the Holder in substitution therefor upon the Company's receipt of (i) evidence reasonably satisfactory to the Company of such event and (ii) if requested by the Company, an indemnity agreement reasonably satisfactory in form and substance to the Company. In the event of the mutilation of or other damage to the Warrant, the Company shall execute and deliver an identical new warrant to the Holder in substitution therefor upon the Company's receipt of the mutilated or damaged warrant.

(c) The Company shall pay all reasonable costs and expenses incurred in connection with any conversion (by Exercise or Exchange), transfer or replacement of this Warrant, including, without limitation, the costs of preparation, execution and delivery of a new warrant and of share certificates representing all Warrant Stock.

**Section 3. Certain Covenants.**

(a) The Company shall at all times reserve for issuance and keep available out of its authorized and unissued Common Stock, solely for the purpose of providing for the exchange of this Warrant, such number of shares of Common Stock as shall from time to time be sufficient therefor.

(b) The Company will not, by amendment or restatement of its Certificate of Incorporation or Bylaws or through reorganization, consolidation, merger, amalgamation, sale of assets or otherwise, avoid or seek to avoid the observance or performance of any of the terms of this Warrant. Without limiting the foregoing, the Company will not increase the par value of any Warrant Stock receivable upon the exchange of this Warrant above the amount payable therefor upon such exchange.

(c) So long as Holder holds this Warrant, the Company shall deliver to Holder such reports as it provides to its common stockholders generally, as and when delivered to such stockholders. Notwithstanding the foregoing, the Company shall provide Holder quarterly and annual financial statements upon request, if such statements are not publicly available. The parties shall not treat the Warrant or the Warrant Stock as being granted or issued as property transferred in connection with the performance of services or otherwise as compensation for services rendered.

**Section 4. Adjustments to Exchange Price and Number of Shares of Warrant Stock.**

4.1 Adjustments. The Exchange Price shall be subject to adjustment from time to time in accordance with this Section 4. Upon each adjustment of the Exchange Price pursuant to this Section 4, the Holder shall thereafter be entitled to acquire upon conversion, at the Exchange Price resulting from such adjustment, the number of shares of Warrant Stock obtainable by multiplying the Exchange Price in effect immediately prior to such adjustment by the number of shares of Warrant Stock acquirable immediately prior to such adjustment and dividing the product thereof by the new Exchange Price resulting from such adjustment.

4.2 Subdivisions, Combinations and Stock Dividends. If the Company shall at any time subdivide by split-up or otherwise, its outstanding Common Stock into a greater number of shares, or issue additional Common Stock as a dividend or otherwise with respect to any Common Stock, the Exchange Price in effect immediately prior to such subdivision or share dividend shall be proportionately reduced and the number of shares acquirable upon Exercise or Exchange hereunder shall be proportionately increased. Conversely, in case the outstanding Common Stock of the Company shall be combined into a smaller number of shares, the Exchange Price in effect immediately prior to such combination shall be proportionately increased and the number of shares acquirable upon Exercise or Exchange hereunder shall be proportionately reduced.

4.3 Reclassification, Exchange, Substitutions, Etc. Upon any reclassification, exchange, substitution, or other event that results in a change of the number and/or class of the securities issuable upon conversion of this Warrant, Holder shall be entitled to receive and the Company shall promptly issue an amended warrant for the number and kind of securities and property that Holder would have received for the Warrant Stock if this Warrant had been converted immediately before such reclassification, exchange, substitution, or other event. The amendment to this Warrant shall provide for adjustments (as determined in good faith by the Board) which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Section 4.3, without limitation, adjustments to the Warrant Price and to the number of securities or property issuable upon conversion of the new Warrant. The provisions of this Section 4.3 shall similarly apply to successive reclassifications, exchanges, substitutions, or other similar events.

4.4 Notices of Record Date, Etc. In the event that the Company shall:

(1) declare any dividend upon its Common Stock, whether payable in cash, property, stock or other securities and whether or not a regular cash dividend, or

(2) offer for sale to (but not necessarily exclusively to) its existing securityholders any additional shares of any class or series of the Company's stock or securities exchangeable for or convertible into such stock in any transaction that would give rise (regardless of waivers thereof) to pre-emptive rights of any class or series of stockholders, or

(3) effect or approve (by stockholder vote or otherwise) any reclassification, exchange, substitution or recapitalization of the capital stock of the Company, including any subdivision or combination of its outstanding capital stock, or consolidation or merger of the Company with, or sale of all or substantially all of its assets to, another corporation, or to liquidate, dissolve or wind up (including an assignment for the benefit of creditors), or

(4) offer holders of registration rights the opportunity to participate in any public offering of the Company's securities,

then, in connection with such event, the Company shall give to Holder:

(i) at least ten (10) days prior written notice of the date on which the books of the Company shall close or a record shall be taken for such a dividend or offer in respect of the matters referred to in (1) or (2) above;

(ii) in the case of the matters referred to in (3) above, at least ten (10) days prior written notice of the date when the same shall take place; and

(iii) in the case of the matter referred to in (4) above, the same notice as is given or required to be given to the holders of such registration rights.

Such notice in accordance with the foregoing clause (1) shall also specify, in the case of any such dividend, the date on which the holders of capital stock shall be entitled thereto and the terms of such dividend, and such notice in accordance with clause (2) shall also specify the date on which the holders of capital stock shall be entitled to exchange their capital stock for securities or other property deliverable upon such reorganization, reclassification, exchange, substitution, consolidation, merger or sale, as the case may be, and the terms of such exchange. Each such written notice shall be given by first class mail, postage prepaid, addressed to the holder of this Warrant at the address of Holder.

4.5 Adjustment by Board. If any event occurs as to which, in the opinion of the Board, the provisions of this Section 4 are not strictly applicable or if strictly applicable would not fairly protect the rights of the Holder in accordance with the essential intent and principles of such provisions, then the Board shall make an adjustment in the application of such provisions, in accordance with such essential intent and principles, so as to protect such rights, but in no event shall any adjustment have the effect of increasing the Exchange Price as otherwise determined pursuant to any of the provisions of this Section 4, except in the case of a combination of shares of a type contemplated in Section 4.2 and then in no event to an amount larger than the Exchange Price as adjusted pursuant to Section 4.2.

4.6 Officers' Statement as to Adjustments. Whenever the Exchange Price and/or number of shares of Warrant Stock subject to the Warrant is required to be adjusted as provided in this Section 4, the Company shall forthwith file at its principal office with a copy to the Holder notice parties set forth in Section 9 hereof a statement, signed by the Chief Executive Officer or Chief Financial Officer of the Company, showing in reasonable detail the facts requiring such adjustment, the Exchange Price and number of issuable shares that will be effective after such adjustment; provided, however, such statement shall not be required to the extent the information otherwise required by this Section 4.7 is available through the Company's current reports filed with the Securities and Exchange Commission.

4.7 Issue of Securities other than Common Stock. In the event that at any time, as a result of any adjustment made pursuant to this Section 4, Holder thereafter shall become entitled to receive any securities of the Company, other than Common Stock, the number of such other shares so receivable upon Exercise or Exchange of this Warrant shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the Common Stock contained in this Section 4.

**Section 5. Rights and Obligations of the Warrant Holder.**

Except as otherwise specified in this Warrant, this Warrant shall not entitle the Holder to any rights of a holder of Common Stock in the Company until such time as this Warrant is exchanged or exercised.

**Section 6. Representations, Warranties and Covenants of the Company.** The Company represents and warrants to, and covenants with, Holder that:

6.1 Corporate Power; Authorization. The Company has all requisite corporate power and has taken all requisite corporate action to execute and deliver this Warrant, to sell and issue the Warrant and Warrant Stock and to carry out and perform all of its obligations hereunder. This Warrant has been duly authorized, executed and delivered on behalf of the Company by the person executing this Warrant and constitutes the valid and binding agreement of the Company, enforceable in accordance with its terms, except (i) as limited by applicable bankruptcy, insolvency, reorganization or similar laws relating to or affecting the enforcement of creditors' rights generally and (ii) as limited by equitable principles generally.

6.2 Validity of Securities. The issuance and delivery of the Warrant is not subject to preemptive or any similar rights of the stockholders of the Company (which have not been duly waived) or any liens or encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws; and when the Warrant Stock is issued upon conversion by Exercise or Exchange in accordance with the terms hereof, and this Warrant is converted into Warrant Stock, such securities will be, at each such issuance, validly issued, fully paid and nonassessable, in compliance with all applicable securities laws and free of any liens or encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws.

6.3 Capitalization. The authorized capital of the Company consists of 40,000,000 common shares, of which 10,182,153 (as of 2/2/18) are issued and outstanding, 1,000,000 Preferred Shares, no par value per share, of which 18,533.51 are issued and outstanding, of which (i) 250,000 are designated as Series A Preferred Shares and none are issued and outstanding, (ii) 10,000 are designated as Series B Preferred Shares and 9,997 are issued and outstanding, (iii) 3,500 are designated as Series C Preferred Shares and 3424.65 are issued and outstanding (iv) 6,000 are designated as Series D Preferred Shares and 5,111.86 are issued and outstanding. Each share of preferred stock can convert into 100 shares of common. Common stock warrants totaling 3,736,702 have been granted in association with the Preferred Share purchases, Common share purchases (including placement agent commissions) and PFG debt issuance. As of the date hereof, the Company has reserved a total of 2,850,000 shares of its Common Stock for issuance under its 2005 Plan, of which 1,177,667 shares (including 450,450 shares of restricted stock) are outstanding and 1,672,333 are reserved for future grants. A true, correct and current copy of the Company's current Restated Articles of Incorporation is appended as Exhibit C hereto. Except as specified in this Agreement or as disclosed in Exhibit D hereto, including with respect to a pending Series E Preferred Share financing, there are no other options, warrants, conversion privileges or other contractual rights presently outstanding to purchase or otherwise acquire any authorized but unissued shares of the Company's capital stock or other securities. Exhibit D hereto sets forth a capitalization table of the Company which is true, correct accurate, complete and materially consistent with this Section 6.3 as of the date hereof.

6.4 No Conflict. The execution and delivery of this Warrant do not, and the consummation of the transactions contemplated hereby will not, conflict with, or result in any violation of, or default (with or without notice or lapse of time, or both), or give rise to a right of termination, cancellation or acceleration of any obligation or to a loss of a material benefit, under, any provision of the Certificate of Incorporation or Bylaws of the Company or any mortgage, indenture, lease or other agreement or instrument, permit, concession, franchise, license, judgment, order, decree, statute, law, ordinance, rule or regulation applicable to the Company, its properties or assets, in each case, the effect of which would have a material adverse effect on the Company or materially impair or restrict its power to perform its obligations as contemplated hereby.

6.5 Governmental and other Consents. No consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any governmental authority or other person or entity is required on the part of the Company in connection with the issuance, sale and delivery of the Warrant and the Warrant Stock, except such filings pursuant to the United States Securities Act of 1933, as amended (the "Securities Act") and applicable state securities laws, which have been made or will be made in a timely manner. All stockholder consents required in connection with issuance of the Warrant and Warrant Stock have either been obtained by Company or no such consents are required.

6.6 Exempt from Registration. Assuming the accuracy of the representations and warranties of Holder in Section 7 hereof, the offer, sale and issuance of the Warrant and the Warrant Stock will be exempt from the registration requirements of the Securities Act pursuant to 506 of Regulation D under the Securities Act and from the registration and qualification requirements of applicable state securities laws. Neither the Company nor any agent on its behalf has solicited or will solicit any offers to sell or has offered to sell or will offer to sell all or any part of such securities to any person or persons so as to bring the offer, sale and issuance of the Warrant or the Warrant Stock by the Company within the registration provisions of the Securities Act.

6.7 Delivery of Information; Accuracy. The Company acknowledges its delivery of certain Representations and Warranties dated as of the date hereof (the "Representations Letter") to Holder, which Representations and Warranties form the basis for Holder purchasing the Warrant. The information contained therein and in all documents, instruments and other information delivered to Holder in connection therewith are true, correct, accurate and complete in all material respects as of the Issue Date.

6.11 Legends. The Company shall remove any restrictive securities legends on Warrant Stock resulting from conversion of this Warrant as soon as permitted by applicable law.

**Section 7. Representations and Warranties of Holder.** Holder hereby represents and warrants to the Company as of the Closing Date as follows:

7.1 Investment Experience. Holder is an “accredited investor” within the meaning of Rule 501 under the Securities Act, and was not organized for the specific purpose of acquiring the Securities. Holder is aware of the Company’s business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access. Holder has such business and financial experience as is required to give it the capacity to protect its own interests in connection with the purchase of the Securities.

7.2 Investment Intent. Holder is purchasing the Warrant for investment for its own account only and not with a view to, or for resale in connection with, any “distribution” thereof within the meaning of the Securities Act. Holder understands that the Warrant has not been registered under the Securities Act or registered or qualified under any state securities law in reliance on specific exemptions therefrom, which exemptions may depend upon, among other things, the bona fide nature of Holder’s investment intent as expressed herein.

7.3 Authorization. Holder has all requisite power and has taken all requisite action required of it to carry out and perform all of its obligations hereunder. The execution and delivery of this Warrant has been duly authorized, executed and delivered on behalf of Holder and constitutes the valid and binding agreement of Holder, enforceable in accordance with its terms, except (i) as limited by applicable bankruptcy, insolvency, reorganization or similar laws relating to or affecting the enforcement of creditors’ rights generally and (ii) as limited by equitable principles generally. The consummation of the transactions contemplated herein and the fulfillment of the terms herein will not result in a breach of any of the terms or provisions of Holder’s constitutional documents or instruments.

7.4 The Act. Holder understands that this Warrant and the Warrant Stock issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder’s investment intent as expressed herein. Holder understands that this Warrant and the Warrant Stock issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

7.5 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the conversion in whole or in part of this Warrant.

**Section 8. Restricted Stock Legend.**

This Warrant and the Warrant Stock have not been registered under any securities laws. Accordingly, any share certificates issued pursuant to the conversion of this Warrant shall (until receipt of an opinion of counsel in customary form that such legend is no longer necessary) bear the following legend:

THIS WARRANT AND THE WARRANT STOCK ISSUABLE UPON CONVERSION HEREOF HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "ACT"), AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE OFFER, SALE, PLEDGE, TRANSFER OR DISTRIBUTION THEREOF. NO SUCH SALE OR DISTRIBUTION MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN CUSTOMARY FORM THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT.

**Section 9. Notices.**

Any notice or other communication required or permitted to be given here shall be in writing and shall be effective (a) upon hand delivery or delivery by e-mail or facsimile at the address or number designated below (if delivered on a business day during normal business hours where such notice is to be received) or the first business day following such delivery (if delivered other than on a business day during normal business hours where such notice is to be received), or (b) on the third business day following the date of mailing by express courier service, fully prepaid, addressed to such address, or upon actual receipt of such mailing, whichever shall first occur. The addresses for such communication shall be:

if to Holder, at

Partners for Growth IV, L.P.  
1660 Tiburon Blvd., Suite D  
Tiburon, California 94920  
Attention: Chief Financial Officer  
Fax: (415) 781-0510  
Email: notices@pfgrowth.com



with a copy (not constituting notice) to

Greenspan Law Office  
Attn: Benjamin Greenspan, Esq.  
620 Laguna Road  
Mill Valley, CA 94941  
Fax: (415) 738-5371  
Email: ben@greenspan-law.com

with the original of this Warrant and any replacement, restatement or reissue of this Warrant to be delivered to:

Robert W. Baird & Co., Inc.  
555 California Street, Suite 4900  
San Francisco, CA 94104  
ATTN: John Fitzgibbons  
Phone # 415-627-3225  
Email: JFitzgibbons@rwbaird.com

or

if to the Company, at

Giga-tronics Incorporated  
5990 Gleason Drive  
Dublin CA, 94568  
Title: CEO  
Name: John Regazzi  
Email: jregazzi@gigatronics.com  
Fax: 925-328-4789

with a copy (not constituting notice) to:

Sheppard Mullin Richter & Hampton LLP  
Four Embarcadero Center, 17th Floor  
San Francisco, CA 94111  
Fax: 415-403-6050  
Attn: Thomas Reddy  
Email: TReddy@sheppardmullin.com

Each party hereto may from time to time change its address for notices under this Section 9 by giving at least 10 calendar days' notice of such changes address to the other party hereto.

**Section 10. Amendments and Waivers.**

This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought. This Warrant may only be amended by an instrument in writing signed by both parties.

**Section 11. Applicable Law; Severability.**

This Warrant shall be governed by and construed and enforced in accordance with the laws of the State of Delaware. If any one or more of the provisions contained in this Warrant, or any application of any provision thereof, shall be invalid, illegal, or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and all other applications of any provision thereof shall not in any way be affected or impaired thereby.

**Section 12. Construction; Headings.**

The terms "Exercise" and "Exchange" may be used interchangeably from time to time in this Warrant, the only substantive difference being that the exercise of rights under this Warrant by Exercise will require payment of cash consideration per share equal to the Exchange Price. The headings used in this Warrant are for the convenience of the parties only and shall not be used in construing the provisions hereof.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the Company has caused this SECOND Amended and Restated Warrant to be duly executed on the day and year first above written.

COMPANY:

Giga-tronics Incorporated

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

ACKNOWLEDGED AND AGREED:

HOLDER:

Partners for Growth IV, L.P.

By: \_\_\_\_\_,  
\_\_\_\_\_, Manager of  
Partners for Growth IV, LLC,  
Its General Partner

Warrant (2nd A&R) Signature Page

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Exhibit A

To:

ELECTION TO EXCHANGE OR EXERCISE

1. The undersigned hereby exercises its right to **Exchange** its Warrant for \_\_\_\_\_ fully paid, validly issued and nonassessable shares of Warrant Stock in accordance with the terms thereof.

1. The undersigned hereby elects to **Exercise** the attached Warrant for fully paid, validly issued and nonassessable shares of Warrant Stock by payment of \$ \_\_\_\_\_ as specified in the attached Warrant. This right is exercised with respect to \_\_\_\_\_ of shares.

[Strike the paragraph above that does not apply.]

The undersigned requests that certificates for such shares be issued in the name of, and delivered to:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. By its execution below and for the benefit of the Company, the undersigned hereby restates each of the representations and warranties in Section 7 of the Warrant as of the date hereof.

Date: \_\_\_\_\_

[Holder]

By \_\_\_\_\_  
Name:  
Title:

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Exhibit B  
ASSIGNMENT FORM

To:

The undersigned hereby assigns and transfers this Warrant to

\_\_\_\_\_  
(Insert assignee's social security or tax identification number)

\_\_\_\_\_  
(Print or type assignee's name, address and postal code)

and irrevocably appoints \_\_\_\_\_ to transfer this Warrant on the books of the Company.

Date: \_\_\_\_\_

Partners for Growth IV, L.P.

By \_\_\_\_\_  
Name: \_\_\_\_\_, Manager of  
Partners for Growth IV, LLC, Its General Partner

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Exhibit C  
Articles of Incorporation

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Exhibit D  
Capitalization Table

	Fully Diluted	
	Shares	Ownership%
Common - Issued and Outstanding	8,584,169	38.2%
PFG Shares	360,000	1.6%
Common - Alara Warrants Exercised at \$1.43	1,010,034	4.5%
Common Shares issued to EGE for E-series	220,000	1.0%
<b>Total common outstanding</b>	<b>10,174,203</b>	<b>45.3%</b>
Alara Series B Preferred - As converted, liquidation preference of \$2.30	999,700	4.5%
Alara Series C Preferred - As converted, liquidation preference of \$1.46	342,465	1.5%
Alara Series D Preferred - As converted, liquidation preference of \$1.43	511,186	2.3%
Series E-As converted, assumes \$1.1M investment	4,400,000	19.6%
<b>Total converted preferred outstanding</b>	<b>6,253,351</b>	<b>27.9%</b>
Common Warrants - PFG at \$1.42 <b>will be repriced to 25 cents</b>	260,000	1.2%
Common Warrants - Alara at \$1.78	898,634	4.0%
Common Warrants - Alara at \$1.76	194,437	0.9%
Common Warrants - EGE Investors at \$1.15, <b>will be repriced to 25 cents</b>	2,090,904	9.3%
Common Warrants - EGE Commission at \$1.15, <b>will be repriced to 25 cents</b>	292,727	1.3%
<b>Total common warrants outstanding</b>	<b>3,736,702</b>	<b>16.6%</b>
Option Pool	1,231,777	5.5%
Common Stock Options Outstanding - Average price \$1.44	679,100	3.0%
Restricted Stock Awards Outstanding	375,450	1.7%
<b>Total Options outstanding</b>	<b>2,286,327</b>	
<b>Fully Diluted</b>	<b>22,450,583</b>	<b>100.0%</b>

**SECOND AMENDED AND RESTATED WARRANT**

THIS SECOND AMENDED AND RESTATED WARRANT ("WARRANT") WAS ORIGINALLY SOLD ON THE ISSUE DATE IN A PRIVATE TRANSACTION AND IS AMENDED AND RESTATED AS OF THE SECOND RESTATEMENT DATE, WITHOUT REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR THE SECURITIES LAWS OF ANY STATE, AND MAY BE OFFERED OR SOLD ONLY IF REGISTERED UNDER THE SECURITIES ACT AND SUCH LAWS OR IF AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT AND SUCH LAWS IS AVAILABLE.

Company / Issuer:	Giga-tronics Incorporated, a California corporation
Number of Shares:	91,520 shares, subject to adjustment
Class of Shares:	Common Stock, no par value / share
Exchange Price:	See Section 1.2
Issue Date:	March 13, 2014
Restatement Date:	June 16, 2014
2 <sup>nd</sup> Restatement Date:	March 26, 2018
Expiration Date:	March 13, 2020

The term "Holder" shall initially refer to SVB Financial Group (by assignment on the Issue Date from its Affiliate, Silicon Valley Bank, a California corporation), which is the initial holder of this Warrant and shall further refer to any subsequent permitted holder of this Warrant from time to time.

Giga-tronics Incorporated, a California corporation (the "Company") does hereby certify and agree that for good and valuable consideration, Holder, or its permitted successors and assigns, hereby is entitled to Exercise or Exchange this Warrant (each as defined below) in the Company for up to Ninety-One Thousand Five Hundred Twenty (91,520) duly authorized, validly issued, fully paid and non-assessable shares of its Common Stock, no par value per share (the "Common Stock") upon the terms and subject to the provisions of this Warrant. The Common Stock issuable upon Exercise or Exchange of this Warrant is referred to herein as the "Warrant Stock". Capitalized terms used but not defined in this Warrant have their meanings as set forth in that certain Loan and Security Agreement of even date herewith between the Company and Partners for Growth IV, L.P. (the "Loan Agreement"), regardless of whether the Loan Agreement is then in effect. When the term "convert" or "conversion" in relation to the Warrant is used herein, it includes an Exchange and an Exercise, each as defined below, as applicable.

**Section 1            Term, Price, Exercise and Exchange of Warrant.**

1.1 Term of Warrant. This Warrant shall be convertible from the Issue Date until the Expiration Date.

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1.2 Exchange Price. The price per share at which the Warrant Stock is issuable upon conversion of this Warrant shall be the lesser of (i) \$0.25 per share and (ii) the exercise price per share under those certain common stock warrants issued to investors as part of Units on or about January 29, 2016, as such exercise price is restated by agreement of the Company and such investors on or about the 2<sup>nd</sup> Restatement Date of this Warrant (the “Exchange Price”).

1.3 Exercise of Warrant; Exchange of Warrant.

(a) This Warrant may be Exercised (as defined below) in whole or in part, upon surrender of this Warrant to the Company at its then principal offices in the United States, together with the form of election to Exchange or Exercise attached hereto as Exhibit A (the “Election”) duly completed and executed with “Exercise” selected as the mode of conversion, and upon payment to the Company of the Exchange Price for the number of shares of Warrant Stock in respect of which this Warrant is then being converted (an “Exercise”). In lieu of an Exercise, Holder may exchange this Warrant in whole or in part on a cashless basis by indicating so in the Election and proceeding in accordance with the remainder of this Section 1.3 (an “Exchange”).

(b) Upon an Exchange, the Holder shall receive Warrant Stock such that, without the payment of any funds, the Holder shall surrender this Warrant in exchange for the number of shares of Warrant Stock equal to “X” (as defined below), computed using the following formula:

$$X = \frac{Y * (A-B)}{A}$$

Where

- X = the number of shares of Warrant Stock to be issued to Holder
- Y = the number of shares of Warrant Stock to be converted under this Warrant
- A = the Fair Market Value of one share of Warrant Stock
- B = the Exchange Price (as adjusted to the date of such calculations)
- \* = multiplied by

(c) For purposes of this Warrant, the “Fair Market Value” of one share of Warrant Stock shall be (i) if the Company’s Common Stock is becomes listed on a national stock exchange, the volume weighted average price per share reported on such exchange over the 30 trading-day period prior to the date Holder delivers its Election to the Company (the “30 Day VWAP”), or (ii) if the Common Stock is traded over-the-counter, the average of the bid and ask price for Common Stock over the 30 trading-day period prior to the date Holder delivers its Election to the Company. If another class or series of Company securities is listed or traded as aforesaid, the Fair Market Value shall be adjusted based on the ratio that the Warrant Stock converts into such other class or series or such other class or series converts into Warrant Stock, as appropriate. If the Common Stock is not traded as contemplated in clauses (i) or (ii), above, the Fair Market Value of the Company’s Warrant Stock shall be the price per share of Warrant Stock which the Company could obtain from a willing buyer of Warrant Stock sold by the Company from its authorized but unissued shares, initially as the Board of Directors of the Company (“Board”) shall determine in its reasonable good faith judgment, but in no event less than the price per share at which Common Stock (or options for Common Stock) are then issuable to Company employees based on a valuation compliant with Section 409A of the United States Internal Revenue Code; provided, however, if Holder disagrees the Fair Market Value of Warrant Stock as determined by the Board, the parties shall jointly engage a valuation expert to value the Warrant Stock based on a valuation of the Company as a going concern using standard valuation methodologies for the Warrant Stock. If the Warrant is to be converted in connection with an Acquisition, the Fair Market Value of a share of Warrant Stock shall be based on the enterprise value specified or implied in such Acquisition and shall be the greater of (A) the value attributable to the Warrant Stock and (B) the value attributable to the Company securities into which the Warrant Stock is (or may be) convertible (but subject to Holder’s conversion directly into such other Company securities).

(d) Upon surrender of this Warrant, and the duly completed and executed Election, and payment of the Exchange Price (if an Exercise) or conversion of this Warrant through Exchange, the Company shall promptly issue and deliver to the Holder or such other person as the Holder may designate in writing a certificate or certificates for the number of shares of Warrant Stock issuable pursuant to the terms of this Warrant upon conversion. Such certificate or certificates shall be deemed to have been issued and any person so designated to be named therein shall be deemed to have become a holder of record of such Warrant Stock as of the date of the surrender of this Warrant, and the duly completed and executed Election, and payment of the Exchange Price in the case of an Exercise or conversion of this Warrant through Exchange; provided, that if the date of surrender of this Warrant and payment of the Exchange Price is not a business day, the certificates for the Warrant Stock shall be deemed to have been issued as of the next business day (whether before or after the Expiration Date). If this Warrant is converted in part, a new warrant of the same tenor and for the number of shares of Warrant Stock not converted shall be executed by the Company and delivered to Holder.

1.4 Fractional Interests. The Company shall not be required to issue fractions of shares of Warrant Stock upon the conversion of this Warrant. If any fraction of a share of Warrant Stock would be issuable upon the exchange of this Warrant (or any portion thereof), the Company shall purchase such fraction for an amount in cash equal to the Fair Market Value of the Warrant Stock.

1.5 Automatic Exchange on Expiration Date. In the event that, by the Expiration Date, this Warrant has not been fully converted, then this Warrant shall be deemed Exchanged pursuant to Section 1.3 as to all Warrant Stock (or such other securities) for which it shall not previously have been converted, and the Company shall promptly deliver a certificate representing the Warrant Stock (or such other securities) issued upon such conversion to the Holder.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) “Acquisition”. For the purpose of this Warrant, “Acquisition” means any sale or other disposition of all or substantially all of the assets of the Company in whatever form, or any reorganization, consolidation, or merger of the Company (whether in a single transaction or multiple related transactions) where the holders of the Company’s securities before the transaction beneficially own less than 50% of the outstanding voting securities of the surviving entity after the transaction(s).

(b) Treatment of Warrant at Acquisition. Upon the closing of any Acquisition, at Holder’s option: (i) if the surviving entity (if applicable in such Acquisition) is willing assume the obligations of the Company under this Warrant, then if Holder so elects this Warrant shall be convertible into the same securities as would be payable for the Warrant Stock issuable upon conversion of the unconverted portion of this Warrant as if such Warrant Stock were outstanding on the record date for the Acquisition (and the Warrant Price and/or number of shares of Warrant Stock shall be adjusted accordingly); or (ii) the Company or other surviving entity in such Acquisition may (in lieu of assuming this Warrant under clause (i)) upon initial closing of such Acquisition purchase this Warrant at its “Fair Value” (the “Purchase Price”). For purposes hereof, “Fair Value” means that value determined by the parties using a Black-Scholes Option-Pricing Model (the “Black-Scholes Calculation”) with the following assumptions: (A) a risk-free interest rate equal to the risk-free interest rate at the time of the closing of the Acquisition (or as close thereto as practicable), (B) a contractual life of the Warrant equal to the remaining term of this Warrant as of the date of the announcement of the Acquisition, (C) an annual dividend yield equal to dividends declared on the underlying Warrant Stock (including securities into which the Warrant Stock may be convertible) during the term of this Warrant (calculated on an annual basis), and (D) a volatility factor of the expected market price of the Company’s Common Stock comprised of: (1) if the Company is publicly traded on a national securities exchange, its volatility over the one year period ending on the day prior to the announcement of the Acquisition, (2) if the Common Stock is traded over-the-counter, its volatility over the one year period ending on the day prior to the announcement of the Acquisition, or (3) if the Company is a non-public company, the volatility, over the one year period prior to the Acquisition, of an average of publicly-traded companies in the same or similar industry to the Company with such companies having similar revenues. The Purchase Price determined in accordance with the above shall be paid upon the initial closing of the Acquisition and shall not be subject to any post-Acquisition closing contingencies or adjustments; provided, however, the parties may take such post-Acquisition closing contingencies or adjustments into account in determining the Purchase Price, and if the parties take any post-Acquisition closing contingencies or adjustments into account, then upon the partial or complete removal of those post-Acquisition closing contingencies or adjustments, a new Black-Scholes Calculation would be made using all of the same inputs except for the value of the Company’s Common Stock (as determined under subclause (D)), and any increase in Fair Value (and, correspondingly, Purchase Price), including, without limitation, as a result of any earn-out or escrowed consideration, would be paid in full to Holder immediately after those post-Acquisition closing contingencies or adjustments can be determined or achieved.

**Section 2. Exchange and Transfer of Warrant.**

(a) This Warrant may be transferred, in whole or in part, without restriction, subject to (i) Holder's compliance with applicable securities laws (including, without limitation, the delivery of investment representation letters and legal opinions in legally sufficient and customary form), and (ii) the transferee holder of the new Warrant assuming in writing the obligations of the Holder and making the representations and warranties set forth in this Warrant. Notwithstanding and without the necessity of delivering an opinion of counsel, Holder may at any time transfer this Warrant in whole or in part to any affiliate. By its acceptance of this Warrant, each such affiliate transferee will be deemed to have made to the Company each of the representations and warranties set forth in Section 7 hereof and agrees to be bound by all of the terms and conditions of this Warrant as if the original Holder hereof. A transfer may be registered with the Company by submission to it of this Warrant, together with the Assignment Form attached hereto as Exhibit B duly completed and executed. After the Company's receipt of this Warrant and the Assignment Form so completed and executed, the Company will issue and deliver to the transferee a new warrant (representing the portion of this Warrant so transferred) at the same Exchange Price per share and otherwise having the same terms and provisions as this Warrant, which the Company will register in the new holder's name. In the event of a partial transfer of this Warrant, the Company shall concurrently issue and deliver to the transferring holder a new warrant that entitles the transferring holder to purchase the balance of this Warrant not so transferred and that otherwise is upon the same terms and conditions as this Warrant. Upon the due delivery of this Warrant for transfer, the transferee holder shall be deemed for all purposes to have become the holder of the new warrant issued for the portion of this Warrant so transferred, effective immediately prior to the close of business on the date of such delivery, irrespective of the date of actual delivery of the new warrant representing the portion of this Warrant so transferred. Notwithstanding any contrary provision herein, at all times prior to the IPO, Holder may not, without the Company's prior written consent, transfer this Warrant or any portion hereof, or any shares issued upon any exercise hereof to any person or entity who directly competes with the Company, except in connection with an Acquisition of the Company by such a direct competitor.

(b) In the event of the loss, theft or destruction of this Warrant, the Company shall execute and deliver an identical new warrant to the Holder in substitution therefor upon the Company's receipt of (i) evidence reasonably satisfactory to the Company of such event and (ii) if requested by the Company, an indemnity agreement reasonably satisfactory in form and substance to the Company. In the event of the mutilation of or other damage to the Warrant, the Company shall execute and deliver an identical new warrant to the Holder in substitution therefor upon the Company's receipt of the mutilated or damaged warrant.

(c) The Company shall pay all reasonable costs and expenses incurred in connection with any conversion (by Exercise or Exchange), transfer or replacement of this Warrant, including, without limitation, the costs of preparation, execution and delivery of a new warrant and of share certificates representing all Warrant Stock.

**Section 3. Certain Covenants.**

(a) The Company shall at all times reserve for issuance and keep available out of its authorized and unissued Common Stock, solely for the purpose of providing for the exchange of this Warrant, such number of shares of Common Stock as shall from time to time be sufficient therefor.

(b) The Company will not, by amendment or restatement of its Certificate of Incorporation or Bylaws or through reorganization, consolidation, merger, amalgamation, sale of assets or otherwise, avoid or seek to avoid the observance or performance of any of the terms of this Warrant. Without limiting the foregoing, the Company will not increase the par value of any Warrant Stock receivable upon the exchange of this Warrant above the amount payable therefor upon such exchange.

(c) So long as Holder holds this Warrant, the Company shall deliver to Holder such reports as it provides to its common stockholders generally, as and when delivered to such stockholders. Notwithstanding the foregoing, the Company shall provide Holder quarterly and annual financial statements upon request, if such statements are not publicly available. The parties shall not treat the Warrant or the Warrant Stock as being granted or issued as property transferred in connection with the performance of services or otherwise as compensation for services rendered.

**Section 4. Adjustments to Exchange Price and Number of Shares of Warrant Stock.**

4.1 Adjustments. The Exchange Price shall be subject to adjustment from time to time in accordance with this Section 4. Upon each adjustment of the Exchange Price pursuant to this Section 4, the Holder shall thereafter be entitled to acquire upon conversion, at the Exchange Price resulting from such adjustment, the number of shares of Warrant Stock obtainable by multiplying the Exchange Price in effect immediately prior to such adjustment by the number of shares of Warrant Stock acquirable immediately prior to such adjustment and dividing the product thereof by the new Exchange Price resulting from such adjustment.

4.2 Subdivisions, Combinations and Stock Dividends. If the Company shall at any time subdivide by split-up or otherwise, its outstanding Common Stock into a greater number of shares, or issue additional Common Stock as a dividend or otherwise with respect to any Common Stock, the Exchange Price in effect immediately prior to such subdivision or share dividend shall be proportionately reduced and the number of shares acquirable upon Exercise or Exchange hereunder shall be proportionately increased. Conversely, in case the outstanding Common Stock of the Company shall be combined into a smaller number of shares, the Exchange Price in effect immediately prior to such combination shall be proportionately increased and the number of shares acquirable upon Exercise or Exchange hereunder shall be proportionately reduced.

4.3 Reclassification, Exchange, Substitutions, Etc. Upon any reclassification, exchange, substitution, or other event that results in a change of the number and/or class of the securities issuable upon conversion of this Warrant, Holder shall be entitled to receive and the Company shall promptly issue an amended warrant for the number and kind of securities and property that Holder would have received for the Warrant Stock if this Warrant had been converted immediately before such reclassification, exchange, substitution, or other event. The amendment to this Warrant shall provide for adjustments (as determined in good faith by the Board) which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Section 4.3, without limitation, adjustments to the Warrant Price and to the number of securities or property issuable upon conversion of the new Warrant. The provisions of this Section 4.3 shall similarly apply to successive reclassifications, exchanges, substitutions, or other similar events.

4.4 Notices of Record Date, Etc. In the event that the Company shall:

(1) declare any dividend upon its Common Stock, whether payable in cash, property, stock or other securities and whether or not a regular cash dividend, or

(2) offer for sale to (but not necessarily exclusively to) its existing securityholders any additional shares of any class or series of the Company's stock or securities exchangeable for or convertible into such stock in any transaction that would give rise (regardless of waivers thereof) to pre-emptive rights of any class or series of stockholders, or

(3) effect or approve (by stockholder vote or otherwise) any reclassification, exchange, substitution or recapitalization of the capital stock of the Company, including any subdivision or combination of its outstanding capital stock, or consolidation or merger of the Company with, or sale of all or substantially all of its assets to, another corporation, or to liquidate, dissolve or wind up (including an assignment for the benefit of creditors), or

(4) offer holders of registration rights the opportunity to participate in any public offering of the Company's securities,

then, in connection with such event, the Company shall give to Holder:

(i) at least ten (10) days prior written notice of the date on which the books of the Company shall close or a record shall be taken for such a dividend or offer in respect of the matters referred to in (1) or (2) above;

(ii) in the case of the matters referred to in (3) above, at least ten (10) days prior written notice of the date when the same shall take place; and

(iii) in the case of the matter referred to in (4) above, the same notice as is given or required to be given to the holders of such registration rights.

Such notice in accordance with the foregoing clause (1) shall also specify, in the case of any such dividend, the date on which the holders of capital stock shall be entitled thereto and the terms of such dividend, and such notice in accordance with clause (2) shall also specify the date on which the holders of capital stock shall be entitled to exchange their capital stock for securities or other property deliverable upon such reorganization, reclassification, exchange, substitution, consolidation, merger or sale, as the case may be, and the terms of such exchange. Each such written notice shall be given by first class mail, postage prepaid, addressed to the holder of this Warrant at the address of Holder.

4.5 Adjustment by Board. If any event occurs as to which, in the opinion of the Board, the provisions of this Section 4 are not strictly applicable or if strictly applicable would not fairly protect the rights of the Holder in accordance with the essential intent and principles of such provisions, then the Board shall make an adjustment in the application of such provisions, in accordance with such essential intent and principles, so as to protect such rights, but in no event shall any adjustment have the effect of increasing the Exchange Price as otherwise determined pursuant to any of the provisions of this Section 4, except in the case of a combination of shares of a type contemplated in Section 4.2 and then in no event to an amount larger than the Exchange Price as adjusted pursuant to Section 4.2.

4.6 Officers' Statement as to Adjustments. Whenever the Exchange Price and/or number of shares of Warrant Stock subject to the Warrant is required to be adjusted as provided in this Section 4, the Company shall forthwith file at its principal office with a copy to the Holder notice parties set forth in Section 9 hereof a statement, signed by the Chief Executive Officer or Chief Financial Officer of the Company, showing in reasonable detail the facts requiring such adjustment, the Exchange Price and number of issuable shares that will be effective after such adjustment; provided, however, such statement shall not be required to the extent the information otherwise required by this Section 4.7 is available through the Company's current reports filed with the Securities and Exchange Commission.

4.7 Issue of Securities other than Common Stock. In the event that at any time, as a result of any adjustment made pursuant to this Section 4, Holder thereafter shall become entitled to receive any securities of the Company, other than Common Stock, the number of such other shares so receivable upon Exercise or Exchange of this Warrant shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the Common Stock contained in this Section 4.

**Section 5. Rights and Obligations of the Warrant Holder.**

Except as otherwise specified in this Warrant, this Warrant shall not entitle the Holder to any rights of a holder of Common Stock in the Company until such time as this Warrant is exchanged or exercised.

**Section 6. Representations, Warranties and Covenants of the Company.** The Company represents and warrants to, and covenants with, Holder that:

6.1 Corporate Power; Authorization. The Company has all requisite corporate power and has taken all requisite corporate action to execute and deliver this Warrant, to sell and issue the Warrant and Warrant Stock and to carry out and perform all of its obligations hereunder. This Warrant has been duly authorized, executed and delivered on behalf of the Company by the person executing this Warrant and constitutes the valid and binding agreement of the Company, enforceable in accordance with its terms, except (i) as limited by applicable bankruptcy, insolvency, reorganization or similar laws relating to or affecting the enforcement of creditors' rights generally and (ii) as limited by equitable principles generally.

6.2 Validity of Securities. The issuance and delivery of the Warrant is not subject to preemptive or any similar rights of the stockholders of the Company (which have not been duly waived) or any liens or encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws; and when the Warrant Stock is issued upon conversion by Exercise or Exchange in accordance with the terms hereof, and this Warrant is converted into Warrant Stock, such securities will be, at each such issuance, validly issued, fully paid and nonassessable, in compliance with all applicable securities laws and free of any liens or encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws.

6.3 Capitalization. The authorized capital of the Company consists of 40,000,000 common shares, of which 10,182,153 (as of 2/2/18) are issued and outstanding, 1,000,000 Preferred Shares, no par value per share, of which 18,533.51 are issued and outstanding, of which (i) 250,000 are designated as Series A Preferred Shares and none are issued and outstanding, (ii) 10,000 are designated as Series B Preferred Shares and 9,997 are issued and outstanding, (iii) 3,500 are designated as Series C Preferred Shares and 3424.65 are issued and outstanding (iv) 6,000 are designated as Series D Preferred Shares and 5,111.86 are issued and outstanding. Each share of preferred stock can convert into 100 shares of common. Common stock warrants totaling 3,736,702 have been granted in association with the Preferred Share purchases, Common share purchases (including placement agent commissions) and PFG debt issuance. As of the date hereof, the Company has reserved a total of 2,850,000 shares of its Common Stock for issuance under its 2005 Plan, of which 1,177,667 shares (including 450,450 shares of restricted stock) are outstanding and 1,672,333 are reserved for future grants. A true, correct and current copy of the Company's current Restated Articles of Incorporation is appended as Exhibit C hereto. Except as specified in this Agreement or as disclosed in Exhibit D hereto, including with respect to a pending Series E Preferred Share financing, there are no other options, warrants, conversion privileges or other contractual rights presently outstanding to purchase or otherwise acquire any authorized but unissued shares of the Company's capital stock or other securities. Exhibit D hereto sets forth a capitalization table of the Company which is true, correct accurate, complete and materially consistent with this Section 6.3 as of the date hereof.



6.4 No Conflict. The execution and delivery of this Warrant do not, and the consummation of the transactions contemplated hereby will not, conflict with, or result in any violation of, or default (with or without notice or lapse of time, or both), or give rise to a right of termination, cancellation or acceleration of any obligation or to a loss of a material benefit, under, any provision of the Certificate of Incorporation or Bylaws of the Company or any mortgage, indenture, lease or other agreement or instrument, permit, concession, franchise, license, judgment, order, decree, statute, law, ordinance, rule or regulation applicable to the Company, its properties or assets, in each case, the effect of which would have a material adverse effect on the Company or materially impair or restrict its power to perform its obligations as contemplated hereby.

6.5 Governmental and other Consents. No consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any governmental authority or other person or entity is required on the part of the Company in connection with the issuance, sale and delivery of the Warrant and the Warrant Stock, except such filings pursuant to the United States Securities Act of 1933, as amended (the "Securities Act") and applicable state securities laws, which have been made or will be made in a timely manner. All stockholder consents required in connection with issuance of the Warrant and Warrant Stock have either been obtained by Company or no such consents are required.

6.6 Exempt from Registration. Assuming the accuracy of the representations and warranties of Holder in Section 7 hereof, the offer, sale and issuance of the Warrant and the Warrant Stock will be exempt from the registration requirements of the Securities Act pursuant to 506 of Regulation D under the Securities Act and from the registration and qualification requirements of applicable state securities laws. Neither the Company nor any agent on its behalf has solicited or will solicit any offers to sell or has offered to sell or will offer to sell all or any part of such securities to any person or persons so as to bring the offer, sale and issuance of the Warrant or the Warrant Stock by the Company within the registration provisions of the Securities Act.

6.7 Delivery of Information; Accuracy. The Company acknowledges its delivery of certain Representations and Warranties dated as of the date hereof (the "Representations Letter") to Holder, which Representations and Warranties form the basis for Holder purchasing the Warrant. The information contained therein and in all documents, instruments and other information delivered to Holder in connection therewith are true, correct, accurate and complete in all material respects as of the Issue Date.

6.11 Legends. The Company shall remove any restrictive securities legends on Warrant Stock resulting from conversion of this Warrant as soon as permitted by applicable law.

**Section 7. Representations and Warranties of Holder.** Holder hereby represents and warrants to the Company as of the Closing Date as follows:

7.1 Investment Experience. Holder is an “accredited investor” within the meaning of Rule 501 under the Securities Act, and was not organized for the specific purpose of acquiring the Securities. Holder is aware of the Company’s business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access. Holder has such business and financial experience as is required to give it the capacity to protect its own interests in connection with the purchase of the Securities.

7.2 Investment Intent. Holder is purchasing the Warrant for investment for its own account only and not with a view to, or for resale in connection with, any “distribution” thereof within the meaning of the Securities Act. Holder understands that the Warrant has not been registered under the Securities Act or registered or qualified under any state securities law in reliance on specific exemptions therefrom, which exemptions may depend upon, among other things, the bona fide nature of Holder’s investment intent as expressed herein.

7.3 Authorization. Holder has all requisite power and has taken all requisite action required of it to carry out and perform all of its obligations hereunder. The execution and delivery of this Warrant has been duly authorized, executed and delivered on behalf of Holder and constitutes the valid and binding agreement of Holder, enforceable in accordance with its terms, except (i) as limited by applicable bankruptcy, insolvency, reorganization or similar laws relating to or affecting the enforcement of creditors’ rights generally and (ii) as limited by equitable principles generally. The consummation of the transactions contemplated herein and the fulfillment of the terms herein will not result in a breach of any of the terms or provisions of Holder’s constitutional documents or instruments.

7.4 The Act. Holder understands that this Warrant and the Warrant Stock issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder’s investment intent as expressed herein. Holder understands that this Warrant and the Warrant Stock issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

7.5 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the conversion in whole or in part of this Warrant.

**Section 8. Restricted Stock Legend.**

This Warrant and the Warrant Stock have not been registered under any securities laws. Accordingly, any share certificates issued pursuant to the conversion of this Warrant shall (until receipt of an opinion of counsel in customary form that such legend is no longer necessary) bear the following legend:

THIS WARRANT AND THE WARRANT STOCK ISSUABLE UPON CONVERSION HEREOF HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "ACT"), AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE OFFER, SALE, PLEDGE, TRANSFER OR DISTRIBUTION THEREOF. NO SUCH SALE OR DISTRIBUTION MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN CUSTOMARY FORM THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT.

**Section 9. Notices.**

Any notice or other communication required or permitted to be given here shall be in writing and shall be effective (a) upon hand delivery or delivery by e-mail or facsimile at the address or number designated below (if delivered on a business day during normal business hours where such notice is to be received) or the first business day following such delivery (if delivered other than on a business day during normal business hours where such notice is to be received), or (b) on the third business day following the date of mailing by express courier service, fully prepaid, addressed to such address, or upon actual receipt of such mailing, whichever shall first occur. The addresses for such communication shall be:

if to Holder, at

SVB Financial Group  
Attn: Treasury - Derivatives Group  
3003 Tasman Drive, HC215  
Santa Clara, CA 95054  
Telephone: 408-654-7400  
Facsimile: 408-354-3085  
warradmi@svb.com

with a copy (not constituting notice) to

Greenspan Law Office  
Attn: Benjamin Greenspan, Esq.  
620 Laguna Road  
Mill Valley, CA 94941  
Fax: (415) 738-5371  
Email: ben@greenspan-law.com

or

if to the Company, at

Giga-tronics Incorporated  
5990 Gleason Drive  
Dublin CA, 94568  
Title: CEO  
Name: John Regazzi  
Email: jregazzi@gigatronics.com  
Fax: 925-328-4789

with a copy (not constituting notice) to:

Sheppard Mullin Richter & Hampton LLP  
Four Embarcadero Center, 17th Floor  
San Francisco, CA 94111  
Fax: 415-403-6050  
Attn: Thomas Reddy  
Email: TReddy@sheppardmullin.com

Each party hereto may from time to time change its address for notices under this Section 9 by giving at least 10 calendar days' notice of such changes address to the other party hereto.

**Section 10. Amendments and Waivers.**

This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought. This Warrant may only be amended by an instrument in writing signed by both parties.

**Section 11. Applicable Law; Severability.**

This Warrant shall be governed by and construed and enforced in accordance with the laws of the State of Delaware. If any one or more of the provisions contained in this Warrant, or any application of any provision thereof, shall be invalid, illegal, or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and all other applications of any provision thereof shall not in any way be affected or impaired thereby.

**Section 12. Construction; Headings.**

The terms "Exercise" and "Exchange" may be used interchangeably from time to time in this Warrant, the only substantive difference being that the exercise of rights under this Warrant by Exercise will require payment of cash consideration per share equal to the Exchange Price. The headings used in this Warrant are for the convenience of the parties only and shall not be used in construing the provisions hereof.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this SECOND Amended and Restated Warrant to be duly executed on the day and year first above written.

COMPANY:

Giga-tronics Incorporated

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

ACKNOWLEDGED AND AGREED:

HOLDER:

SVB Financial Group

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Warrant (2nd A&R) Signature Page

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Exhibit A

To:

ELECTION TO EXCHANGE OR EXERCISE

1. The undersigned hereby exercises its right to **Exchange** its Warrant for \_\_\_\_\_ fully paid, validly issued and nonassessable shares of Warrant Stock in accordance with the terms thereof.

1. The undersigned hereby elects to **Exercise** the attached Warrant for fully paid, validly issued and nonassessable shares of Warrant Stock by payment of \$ \_\_\_\_\_ as specified in the attached Warrant. This right is exercised with respect to \_\_\_\_\_ of shares.

[Strike the paragraph above that does not apply.]

The undersigned requests that certificates for such shares be issued in the name of, and delivered to:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. By its execution below and for the benefit of the Company, the undersigned hereby restates each of the representations and warranties in Section 7 of the Warrant as of the date hereof.

Date: \_\_\_\_\_

[Holder]

By \_\_\_\_\_  
Name:  
Title:

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Exhibit B  
ASSIGNMENT FORM

To:

The undersigned hereby assigns and transfers this Warrant to

\_\_\_\_\_  
(Insert assignee's social security or tax identification number)

\_\_\_\_\_  
(Print or type assignee's name, address and postal code)

\_\_\_\_\_  
\_\_\_\_\_

and irrevocably appoints \_\_\_\_\_ to transfer this Warrant on the books of the Company.

Date: \_\_\_\_\_

SVB Financial Group

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

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Exhibit C  
Articles of Incorporation

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Exhibit D  
Capitalization Table

	Fully Diluted	
	Shares	Ownership%
Common - Issued and Outstanding	8,584,169	38.2%
PFG Shares	360,000	1.6%
Common - Alara Warrants Exercised at \$1.43	1,010,034	4.5%
Common Shares issued to EGE for E-series	220,000	1.0%
<b>Total common outstanding</b>	<b>10,174,203</b>	<b>45.3%</b>
Alara Series B Preferred - As converted, liquidation preference of \$2.30	999,700	4.5%
Alara Series C Preferred - As converted, liquidation preference of \$1.46	342,465	1.5%
Alara Series D Preferred - As converted, liquidation preference of \$1.43	511,186	2.3%
Series E-As converted, assumes \$1.1M investment	4,400,000	19.6%
<b>Total converted preferred outstanding</b>	<b>6,253,351</b>	<b>27.9%</b>
Common Warrants - PFG at \$1.42 <b>will be repriced to 25 cents</b>	260,000	1.2%
Common Warrants - Alara at \$1.78	898,634	4.0%
Common Warrants - Alara at \$1.76	194,437	0.9%
Common Warrants - EGE Investors at \$1.15, <b>will be repriced to 25 cents</b>	2,090,904	9.3%
Common Warrants - EGE Commission at \$1.15, <b>will be repriced to 25 cents</b>	292,727	1.3%
<b>Total common warrants outstanding</b>	<b>3,736,702</b>	<b>16.6%</b>
Option Pool	1,231,777	5.5%
Common Stock Options Outstanding - Average price \$1.44	679,100	3.0%
Restricted Stock Awards Outstanding	375,450	1.7%
<b>Total Options outstanding</b>	<b>2,286,327</b>	
<b>Fully Diluted</b>	<b>22,450,583</b>	<b>100.0%</b>

**SECOND AMENDED AND RESTATED WARRANT**

THIS SECOND AMENDED AND RESTATED WARRANT ("WARRANT") WAS ORIGINALLY SOLD ON THE ISSUE DATE IN A PRIVATE TRANSACTION AND IS AMENDED AND RESTATED AS OF THE 2<sup>nd</sup> RESTATEMENT DATE, WITHOUT REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR THE SECURITIES LAWS OF ANY STATE, AND MAY BE OFFERED OR SOLD ONLY IF REGISTERED UNDER THE SECURITIES ACT AND SUCH LAWS OR IF AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT AND SUCH LAWS IS AVAILABLE.

Company / Issuer:	Giga-tronics Incorporated, a California corporation
Number of Shares:	12,480 shares, subject to adjustment
Class of Shares:	Common Stock, no par value / share
Exchange Price:	See Section 1.2
Issue Date:	March 13, 2014
Restatement Date:	June 16, 2014
2 <sup>nd</sup> Restatement Date:	March 26, 2018
Expiration Date:	March 13, 2020

The term "Holder" shall initially refer to PFG Equity Investors, LLC, a Delaware limited liability company, which is the initial holder of this Warrant and shall further refer to any subsequent permitted holder of this Warrant from time to time.

Giga-tronics Incorporated, a California corporation (the "Company") does hereby certify and agree that, for the sum of \$232 paid by Holder on the Issue Date, which the parties agree was fair consideration for this Warrant, Holder, or its permitted successors and assigns, hereby is entitled to Exercise or Exchange this Warrant (each as defined below) in the Company for up to Twelve Thousand Four Hundred Eighty (12,480) duly authorized, validly issued, fully paid and non-assessable shares of its Common Stock, no par value per share (the "Common Stock") upon the terms and subject to the provisions of this Warrant. The Common Stock issuable upon Exercise or Exchange of this Warrant is referred to herein as the "Warrant Stock". Capitalized terms used but not defined in this Warrant have their meanings as set forth in that certain Loan and Security Agreement of even date herewith between the Company and Partners for Growth IV, L.P., an affiliate of Holder (as amended, the "Loan Agreement"), regardless of whether the Loan Agreement is then in effect. When the term "convert" or "conversion" in relation to the Warrant is used herein, it includes an Exchange and an Exercise, each as defined below, as applicable.

**Section 1      Term, Price, Exercise and Exchange of Warrant.**

1.1 Term of Warrant. This Warrant shall be convertible from the Issue Date until the Expiration Date.

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1.2 Exchange Price. The price per share at which the Warrant Stock is issuable upon conversion of this Warrant shall be the lesser of (i) \$0.25 per share and (ii) the exercise price per share under those certain common stock warrants issued to investors as part of Units on or about January 29, 2016, as such exercise price is restated by agreement of the Company and such investors on or about the 2<sup>nd</sup> Restatement Date of this Warrant (the “Exchange Price”).

1.3 Exercise of Warrant; Exchange of Warrant.

(a) This Warrant may be Exercised (as defined below) in whole or in part, upon surrender of this Warrant to the Company at its then principal offices in the United States, together with the form of election to Exchange or Exercise attached hereto as Exhibit A (the “Election”) duly completed and executed with “Exercise” selected as the mode of conversion, and upon payment to the Company of the Exchange Price for the number of shares of Warrant Stock in respect of which this Warrant is then being converted (an “Exercise”). In lieu of an Exercise, Holder may exchange this Warrant in whole or in part on a cashless basis by indicating so in the Election and proceeding in accordance with the remainder of this Section 1.3 (an “Exchange”).

(b) Upon an Exchange, the Holder shall receive Warrant Stock such that, without the payment of any funds, the Holder shall surrender this Warrant in exchange for the number of shares of Warrant Stock equal to “X” (as defined below), computed using the following formula:

$$X = \frac{Y * (A-B)}{A}$$

Where

- X = the number of shares of Warrant Stock to be issued to Holder
- Y = the number of shares of Warrant Stock to be converted under this Warrant
- A = the Fair Market Value of one share of Warrant Stock
- B = the Exchange Price (as adjusted to the date of such calculations)
- \* = multiplied by

(c) For purposes of this Warrant, the “Fair Market Value” of one share of Warrant Stock shall be (i) if the Company’s Common Stock is becomes listed on a national stock exchange, the volume weighted average price per share reported on such exchange over the 30 trading-day period prior to the date Holder delivers its Election to the Company (the “30 Day VWAP”), or (ii) if the Common Stock is traded over-the-counter, the average of the bid and ask price for Common Stock over the 30 trading-day period prior to the date Holder delivers its Election to the Company. If another class or series of Company securities is listed or traded as aforesaid, the Fair Market Value shall be adjusted based on the ratio that the Warrant Stock converts into such other class or series or such other class or series converts into Warrant Stock, as appropriate. If the Common Stock is not traded as contemplated in clauses (i) or (ii), above, the Fair Market Value of the Company’s Warrant Stock shall be the price per share of Warrant Stock which the Company could obtain from a willing buyer of Warrant Stock sold by the Company from its authorized but unissued shares, initially as the Board of Directors of the Company (“Board”) shall determine in its reasonable good faith judgment, but in no event less than the price per share at which Common Stock (or options for Common Stock) are then issuable to Company employees based on a valuation compliant with Section 409A of the United States Internal Revenue Code; provided, however, if Holder disagrees the Fair Market Value of Warrant Stock as determined by the Board, the parties shall jointly engage a valuation expert to value the Warrant Stock based on a valuation of the Company as a going concern using standard valuation methodologies for the Warrant Stock. If the Warrant is to be converted in connection with an Acquisition, the Fair Market Value of a share of Warrant Stock shall be based on the enterprise value specified or implied in such Acquisition and shall be the greater of (A) the value attributable to the Warrant Stock and (B) the value attributable to the Company securities into which the Warrant Stock is (or may be) convertible (but subject to Holder’s conversion directly into such other Company securities).

(d) Upon surrender of this Warrant, and the duly completed and executed Election, and payment of the Exchange Price (if an Exercise) or conversion of this Warrant through Exchange, the Company shall promptly issue and deliver to the Holder or such other person as the Holder may designate in writing a certificate or certificates for the number of shares of Warrant Stock issuable pursuant to the terms of this Warrant upon conversion. Such certificate or certificates shall be deemed to have been issued and any person so designated to be named therein shall be deemed to have become a holder of record of such Warrant Stock as of the date of the surrender of this Warrant, and the duly completed and executed Election, and payment of the Exchange Price in the case of an Exercise or conversion of this Warrant through Exchange; provided, that if the date of surrender of this Warrant and payment of the Exchange Price is not a business day, the certificates for the Warrant Stock shall be deemed to have been issued as of the next business day (whether before or after the Expiration Date). If this Warrant is converted in part, a new warrant of the same tenor and for the number of shares of Warrant Stock not converted shall be executed by the Company and delivered to Holder.

1.4 Fractional Interests. The Company shall not be required to issue fractions of shares of Warrant Stock upon the conversion of this Warrant. If any fraction of a share of Warrant Stock would be issuable upon the exchange of this Warrant (or any portion thereof), the Company shall purchase such fraction for an amount in cash equal to the Fair Market Value of the Warrant Stock.

1.5 Automatic Put or Exchange on Expiration Date. In the event that, by the Expiration Date, this Warrant has not been fully converted, then this Warrant shall be deemed Exchanged pursuant to Section 1.3 as to all Warrant Stock (or such other securities) for which it shall not previously have been converted, and the Company shall promptly deliver a certificate representing the Warrant Stock (or such other securities) issued upon such conversion to the Holder.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) “Acquisition”. For the purpose of this Warrant, “Acquisition” means any sale or other disposition of all or substantially all of the assets of the Company in whatever form, or any reorganization, consolidation, or merger of the Company (whether in a single transaction or multiple related transactions) where the holders of the Company’s securities before the transaction beneficially own less than 50% of the outstanding voting securities of the surviving entity after the transaction(s).

(b) Treatment of Warrant at Acquisition. Upon the closing of any Acquisition, at Holder’s option: (i) if the surviving entity (if applicable in such Acquisition) is willing assume the obligations of the Company under this Warrant, then if Holder so elects this Warrant shall be convertible into the same securities as would be payable for the Warrant Stock issuable upon conversion of the unconverted portion of this Warrant as if such Warrant Stock were outstanding on the record date for the Acquisition (and the Warrant Price and/or number of shares of Warrant Stock shall be adjusted accordingly); or (ii) the Company or other surviving entity in such Acquisition may (in lieu of assuming this Warrant under clause (i)) upon initial closing of such Acquisition purchase this Warrant at its “Fair Value” (the “Purchase Price”). For purposes hereof, “Fair Value” means that value determined by the parties using a Black-Scholes Option-Pricing Model (the “Black-Scholes Calculation”) with the following assumptions: (A) a risk-free interest rate equal to the risk-free interest rate at the time of the closing of the Acquisition (or as close thereto as practicable), (B) a contractual life of the Warrant equal to the remaining term of this Warrant as of the date of the announcement of the Acquisition, (C) an annual dividend yield equal to dividends declared on the underlying Warrant Stock (including securities into which the Warrant Stock may be convertible) during the term of this Warrant (calculated on an annual basis), and (D) a volatility factor of the expected market price of the Company’s Common Stock comprised of: (1) if the Company is publicly traded on a national securities exchange, its volatility over the one year period ending on the day prior to the announcement of the Acquisition, (2) if the Common Stock is traded over-the-counter, its volatility over the one year period ending on the day prior to the announcement of the Acquisition, or (3) if the Company is a non-public company, the volatility, over the one year period prior to the Acquisition, of an average of publicly-traded companies in the same or similar industry to the Company with such companies having similar revenues. The Purchase Price determined in accordance with the above shall be paid upon the initial closing of the Acquisition and shall not be subject to any post-Acquisition closing contingencies or adjustments; provided, however, the parties may take such post-Acquisition closing contingencies or adjustments into account in determining the Purchase Price, and if the parties take any post-Acquisition closing contingencies or adjustments into account, then upon the partial or complete removal of those post-Acquisition closing contingencies or adjustments, a new Black-Scholes Calculation would be made using all of the same inputs except for the value of the Company’s Common Stock (as determined under subclause (D)), and any increase in Fair Value (and, correspondingly, Purchase Price), including, without limitation, as a result of any earn-out or escrowed consideration, would be paid in full to Holder immediately after those post-Acquisition closing contingencies or adjustments can be determined or achieved.

**Section 2. Exchange and Transfer of Warrant.**

(a) This Warrant may be transferred, in whole or in part, without restriction, subject to (i) Holder's compliance with applicable securities laws (including, without limitation, the delivery of investment representation letters and legal opinions in legally sufficient and customary form), and (ii) the transferee holder of the new Warrant assuming in writing the obligations of the Holder and making the representations and warranties set forth in this Warrant. Notwithstanding and without the necessity of delivering an opinion of counsel, Holder may at any time transfer this Warrant in whole or in part to any affiliate. By its acceptance of this Warrant, each such affiliate transferee will be deemed to have made to the Company each of the representations and warranties set forth in Section 7 hereof and agrees to be bound by all of the terms and conditions of this Warrant as if the original Holder hereof. A transfer may be registered with the Company by submission to it of this Warrant, together with the Assignment Form attached hereto as Exhibit B duly completed and executed. After the Company's receipt of this Warrant and the Assignment Form so completed and executed, the Company will issue and deliver to the transferee a new warrant (representing the portion of this Warrant so transferred) at the same Exchange Price per share and otherwise having the same terms and provisions as this Warrant, which the Company will register in the new holder's name. In the event of a partial transfer of this Warrant, the Company shall concurrently issue and deliver to the transferring holder a new warrant that entitles the transferring holder to purchase the balance of this Warrant not so transferred and that otherwise is upon the same terms and conditions as this Warrant. Upon the due delivery of this Warrant for transfer, the transferee holder shall be deemed for all purposes to have become the holder of the new warrant issued for the portion of this Warrant so transferred, effective immediately prior to the close of business on the date of such delivery, irrespective of the date of actual delivery of the new warrant representing the portion of this Warrant so transferred. Notwithstanding any contrary provision herein, at all times prior to the IPO, Holder may not, without the Company's prior written consent, transfer this Warrant or any portion hereof, or any shares issued upon any exercise hereof to any person or entity who directly competes with the Company, except in connection with an Acquisition of the Company by such a direct competitor.

(b) In the event of the loss, theft or destruction of this Warrant, the Company shall execute and deliver an identical new warrant to the Holder in substitution therefor upon the Company's receipt of (i) evidence reasonably satisfactory to the Company of such event and (ii) if requested by the Company, an indemnity agreement reasonably satisfactory in form and substance to the Company. In the event of the mutilation of or other damage to the Warrant, the Company shall execute and deliver an identical new warrant to the Holder in substitution therefor upon the Company's receipt of the mutilated or damaged warrant.

(c) The Company shall pay all reasonable costs and expenses incurred in connection with any conversion (by Exercise or Exchange), transfer or replacement of this Warrant, including, without limitation, the costs of preparation, execution and delivery of a new warrant and of share certificates representing all Warrant Stock.

**Section 3. Certain Covenants.**

(a) The Company shall at all times reserve for issuance and keep available out of its authorized and unissued Common Stock, solely for the purpose of providing for the exchange of this Warrant, such number of shares of Common Stock as shall from time to time be sufficient therefor.

(b) The Company will not, by amendment or restatement of its Certificate of Incorporation or Bylaws or through reorganization, consolidation, merger, amalgamation, sale of assets or otherwise, avoid or seek to avoid the observance or performance of any of the terms of this Warrant. Without limiting the foregoing, the Company will not increase the par value of any Warrant Stock receivable upon the exchange of this Warrant above the amount payable therefor upon such exchange.

(c) So long as Holder holds this Warrant, the Company shall deliver to Holder such reports as it provides to its common stockholders generally, as and when delivered to such stockholders. Notwithstanding the foregoing, the Company shall provide Holder quarterly and annual financial statements upon request, if such statements are not publicly available. The parties shall not treat the Warrant or the Warrant Stock as being granted or issued as property transferred in connection with the performance of services or otherwise as compensation for services rendered.

**Section 4. Adjustments to Exchange Price and Number of Shares of Warrant Stock.**

4.1 Adjustments. The Exchange Price shall be subject to adjustment from time to time in accordance with this Section 4. Upon each adjustment of the Exchange Price pursuant to this Section 4, the Holder shall thereafter be entitled to acquire upon conversion, at the Exchange Price resulting from such adjustment, the number of shares of Warrant Stock obtainable by multiplying the Exchange Price in effect immediately prior to such adjustment by the number of shares of Warrant Stock acquirable immediately prior to such adjustment and dividing the product thereof by the new Exchange Price resulting from such adjustment.

4.2 Subdivisions, Combinations and Stock Dividends. If the Company shall at any time subdivide by split-up or otherwise, its outstanding Common Stock into a greater number of shares, or issue additional Common Stock as a dividend or otherwise with respect to any Common Stock, the Exchange Price in effect immediately prior to such subdivision or share dividend shall be proportionately reduced and the number of shares acquirable upon Exercise or Exchange hereunder shall be proportionately increased. Conversely, in case the outstanding Common Stock of the Company shall be combined into a smaller number of shares, the Exchange Price in effect immediately prior to such combination shall be proportionately increased and the number of shares acquirable upon Exercise or Exchange hereunder shall be proportionately reduced.



4.3 Reclassification, Exchange, Substitutions, Etc. Upon any reclassification, exchange, substitution, or other event that results in a change of the number and/or class of the securities issuable upon conversion of this Warrant, Holder shall be entitled to receive and the Company shall promptly issue an amended warrant for the number and kind of securities and property that Holder would have received for the Warrant Stock if this Warrant had been converted immediately before such reclassification, exchange, substitution, or other event. The amendment to this Warrant shall provide for adjustments (as determined in good faith by the Board) which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Section 4.3, without limitation, adjustments to the Warrant Price and to the number of securities or property issuable upon conversion of the new Warrant. The provisions of this Section 4.3 shall similarly apply to successive reclassifications, exchanges, substitutions, or other similar events.

4.4 Notices of Record Date, Etc. In the event that the Company shall:

(1) declare any dividend upon its Common Stock, whether payable in cash, property, stock or other securities and whether or not a regular cash dividend, or

(2) offer for sale to (but not necessarily exclusively to) its existing securityholders any additional shares of any class or series of the Company's stock or securities exchangeable for or convertible into such stock in any transaction that would give rise (regardless of waivers thereof) to pre-emptive rights of any class or series of stockholders, or

(3) effect or approve (by stockholder vote or otherwise) any reclassification, exchange, substitution or recapitalization of the capital stock of the Company, including any subdivision or combination of its outstanding capital stock, or consolidation or merger of the Company with, or sale of all or substantially all of its assets to, another corporation, or to liquidate, dissolve or wind up (including an assignment for the benefit of creditors), or

(4) offer holders of registration rights the opportunity to participate in any public offering of the Company's securities,

then, in connection with such event, the Company shall give to Holder:

(i) at least ten (10) days prior written notice of the date on which the books of the Company shall close or a record shall be taken for such a dividend or offer in respect of the matters referred to in (1) or (2) above;

(ii) in the case of the matters referred to in (3) above, at least ten (10) days prior written notice of the date when the same shall take place; and

(iii) in the case of the matter referred to in (4) above, the same notice as is given or required to be given to the holders of such registration rights.

Such notice in accordance with the foregoing clause (1) shall also specify, in the case of any such dividend, the date on which the holders of capital stock shall be entitled thereto and the terms of such dividend, and such notice in accordance with clause (2) shall also specify the date on which the holders of capital stock shall be entitled to exchange their capital stock for securities or other property deliverable upon such reorganization, reclassification, exchange, substitution, consolidation, merger or sale, as the case may be, and the terms of such exchange. Each such written notice shall be given by first class mail, postage prepaid, addressed to the holder of this Warrant at the address of Holder.

4.5 Adjustment by Board. If any event occurs as to which, in the opinion of the Board, the provisions of this Section 4 are not strictly applicable or if strictly applicable would not fairly protect the rights of the Holder in accordance with the essential intent and principles of such provisions, then the Board shall make an adjustment in the application of such provisions, in accordance with such essential intent and principles, so as to protect such rights, but in no event shall any adjustment have the effect of increasing the Exchange Price as otherwise determined pursuant to any of the provisions of this Section 4, except in the case of a combination of shares of a type contemplated in Section 4.2 and then in no event to an amount larger than the Exchange Price as adjusted pursuant to Section 4.2.

4.6 Officers' Statement as to Adjustments. Whenever the Exchange Price and/or number of shares of Warrant Stock subject to the Warrant is required to be adjusted as provided in this Section 4, the Company shall forthwith file at its principal office with a copy to the Holder notice parties set forth in Section 9 hereof a statement, signed by the Chief Executive Officer or Chief Financial Officer of the Company, showing in reasonable detail the facts requiring such adjustment, the Exchange Price and number of issuable shares that will be effective after such adjustment; provided, however, such statement shall not be required to the extent the information otherwise required by this Section 4.7 is available through the Company's current reports filed with the Securities and Exchange Commission.

4.7 Issue of Securities other than Common Stock. In the event that at any time, as a result of any adjustment made pursuant to this Section 4, Holder thereafter shall become entitled to receive any securities of the Company, other than Common Stock, the number of such other shares so receivable upon Exercise or Exchange of this Warrant shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the Common Stock contained in this Section 4.

**Section 5. Rights and Obligations of the Warrant Holder.**

Except as otherwise specified in this Warrant, this Warrant shall not entitle the Holder to any rights of a holder of Common Stock in the Company until such time as this Warrant is exchanged or exercised.

**Section 6. Representations, Warranties and Covenants of the Company.** The Company represents and warrants to, and covenants with, Holder that:

6.1 Corporate Power; Authorization. The Company has all requisite corporate power and has taken all requisite corporate action to execute and deliver this Warrant, to sell and issue the Warrant and Warrant Stock and to carry out and perform all of its obligations hereunder. This Warrant has been duly authorized, executed and delivered on behalf of the Company by the person executing this Warrant and constitutes the valid and binding agreement of the Company, enforceable in accordance with its terms, except (i) as limited by applicable bankruptcy, insolvency, reorganization or similar laws relating to or affecting the enforcement of creditors' rights generally and (ii) as limited by equitable principles generally.

6.2 Validity of Securities. The issuance and delivery of the Warrant is not subject to preemptive or any similar rights of the stockholders of the Company (which have not been duly waived) or any liens or encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws; and when the Warrant Stock is issued upon conversion by Exercise or Exchange in accordance with the terms hereof, and this Warrant is converted into Warrant Stock, such securities will be, at each such issuance, validly issued, fully paid and nonassessable, in compliance with all applicable securities laws and free of any liens or encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws.

6.3 Capitalization. The authorized capital of the Company consists of 40,000,000 common shares, of which 10,182,153 (as of 2/2/18) are issued and outstanding, 1,000,000 Preferred Shares, no par value per share, of which 18,533.51 are issued and outstanding, of which (i) 250,000 are designated as Series A Preferred Shares and none are issued and outstanding, (ii) 10,000 are designated as Series B Preferred Shares and 9,997 are issued and outstanding, (iii) 3,500 are designated as Series C Preferred Shares and 3424.65 are issued and outstanding (iv) 6,000 are designated as Series D Preferred Shares and 5,111.86 are issued and outstanding. Each share of preferred stock can convert into 100 shares of common. Common stock warrants totaling 3,736,702 have been granted in association with the Preferred Share purchases, Common share purchases (including placement agent commissions) and PFG debt issuance. As of the date hereof, the Company has reserved a total of 2,850,000 shares of its Common Stock for issuance under its 2005 Plan, of which 1,177,667 shares (including 450,450 shares of restricted stock) are outstanding and 1,672,333 are reserved for future grants. A true, correct and current copy of the Company's current Restated Articles of Incorporation is appended as Exhibit C hereto. Except as specified in this Agreement or as disclosed in Exhibit D hereto, including with respect to a pending Series E Preferred Share financing, there are no other options, warrants, conversion privileges or other contractual rights presently outstanding to purchase or otherwise acquire any authorized but unissued shares of the Company's capital stock or other securities. Exhibit D hereto sets forth a capitalization table of the Company which is true, correct accurate, complete and materially consistent with this Section 6.3 as of the date hereof.

6.4 No Conflict. The execution and delivery of this Warrant do not, and the consummation of the transactions contemplated hereby will not, conflict with, or result in any violation of, or default (with or without notice or lapse of time, or both), or give rise to a right of termination, cancellation or acceleration of any obligation or to a loss of a material benefit, under, any provision of the Certificate of Incorporation or Bylaws of the Company or any mortgage, indenture, lease or other agreement or instrument, permit, concession, franchise, license, judgment, order, decree, statute, law, ordinance, rule or regulation applicable to the Company, its properties or assets, in each case, the effect of which would have a material adverse effect on the Company or materially impair or restrict its power to perform its obligations as contemplated hereby.

6.5 Governmental and other Consents. No consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any governmental authority or other person or entity is required on the part of the Company in connection with the issuance, sale and delivery of the Warrant and the Warrant Stock, except such filings pursuant to the United States Securities Act of 1933, as amended (the "Securities Act") and applicable state securities laws, which have been made or will be made in a timely manner. All stockholder consents required in connection with issuance of the Warrant and Warrant Stock have either been obtained by Company or no such consents are required.

6.6 Exempt from Registration. Assuming the accuracy of the representations and warranties of Holder in Section 7 hereof, the offer, sale and issuance of the Warrant and the Warrant Stock will be exempt from the registration requirements of the Securities Act pursuant to 506 of Regulation D under the Securities Act and from the registration and qualification requirements of applicable state securities laws. Neither the Company nor any agent on its behalf has solicited or will solicit any offers to sell or has offered to sell or will offer to sell all or any part of such securities to any person or persons so as to bring the offer, sale and issuance of the Warrant or the Warrant Stock by the Company within the registration provisions of the Securities Act.

6.7 Delivery of Information; Accuracy. The Company acknowledges its delivery of certain Representations and Warranties dated as of the date hereof (the "Representations Letter") to Holder, which Representations and Warranties form the basis for Holder purchasing the Warrant. The information contained therein and in all documents, instruments and other information delivered to Holder in connection therewith are true, correct, accurate and complete in all material respects as of the Issue Date.

6.11 Legends. The Company shall remove any restrictive securities legends on Warrant Stock resulting from conversion of this Warrant as soon as permitted by applicable law.

**Section 7. Representations and Warranties of Holder.** Holder hereby represents and warrants to the Company as of the Closing Date as follows:

7.1 Investment Experience. Holder is an “accredited investor” within the meaning of Rule 501 under the Securities Act, and was not organized for the specific purpose of acquiring the Securities. Holder is aware of the Company’s business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access. Holder has such business and financial experience as is required to give it the capacity to protect its own interests in connection with the purchase of the Securities.

7.2 Investment Intent. Holder is purchasing the Warrant for investment for its own account only and not with a view to, or for resale in connection with, any “distribution” thereof within the meaning of the Securities Act. Holder understands that the Warrant has not been registered under the Securities Act or registered or qualified under any state securities law in reliance on specific exemptions therefrom, which exemptions may depend upon, among other things, the bona fide nature of Holder’s investment intent as expressed herein.

7.3 Authorization. Holder has all requisite power and has taken all requisite action required of it to carry out and perform all of its obligations hereunder. The execution and delivery of this Warrant has been duly authorized, executed and delivered on behalf of Holder and constitutes the valid and binding agreement of Holder, enforceable in accordance with its terms, except (i) as limited by applicable bankruptcy, insolvency, reorganization or similar laws relating to or affecting the enforcement of creditors’ rights generally and (ii) as limited by equitable principles generally. The consummation of the transactions contemplated herein and the fulfillment of the terms herein will not result in a breach of any of the terms or provisions of Holder’s constitutional documents or instruments.

7.4 The Act. Holder understands that this Warrant and the Warrant Stock issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder’s investment intent as expressed herein. Holder understands that this Warrant and the Warrant Stock issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

7.5 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the conversion in whole or in part of this Warrant.

**Section 8. Restricted Stock Legend.**

This Warrant and the Warrant Stock have not been registered under any securities laws. Accordingly, any share certificates issued pursuant to the conversion of this Warrant shall (until receipt of an opinion of counsel in customary form that such legend is no longer necessary) bear the following legend:

THIS WARRANT AND THE WARRANT STOCK ISSUABLE UPON CONVERSION HEREOF HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "ACT"), AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE OFFER, SALE, PLEDGE, TRANSFER OR DISTRIBUTION THEREOF. NO SUCH SALE OR DISTRIBUTION MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN CUSTOMARY FORM THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT.

**Section 9. Notices.**

Any notice or other communication required or permitted to be given here shall be in writing and shall be effective (a) upon hand delivery or delivery by e-mail or facsimile at the address or number designated below (if delivered on a business day during normal business hours where such notice is to be received) or the first business day following such delivery (if delivered other than on a business day during normal business hours where such notice is to be received), or (b) on the third business day following the date of mailing by express courier service, fully prepaid, addressed to such address, or upon actual receipt of such mailing, whichever shall first occur. The addresses for such communication shall be:

if to Holder, at

PFG Equity Investors, LLC  
1660 Tiburon Blvd., Suite D  
Tiburon, California 94920  
Attention: Chief Financial Officer  
Fax: (415) 781-0510  
Email: notices@pfgrowth.com

with a copy (not constituting notice) to

Greenspan Law Office  
Attn: Benjamin Greenspan, Esq.  
620 Laguna Road  
Mill Valley, CA 94941  
Fax: (415) 738-5371  
Email: ben@greenspan-law.com

with the original of this Warrant and any replacement, restatement or reissue of this Warrant to be delivered to:

Robert W. Baird & Co., Inc.  
555 California Street, Suite 4900  
San Francisco, CA 94104  
ATTN: John Fitzgibbons  
Phone # 415-627-3225  
Email: JFitzgibbons@rwbaird.com

or

if to the Company, at

Giga-tronics Incorporated  
5990 Gleason Drive  
Dublin CA, 94568  
Title: CEO  
Name: John Regazzi  
Email: jregazzi@gigatronics.com  
Fax: 925-328-4789

with a copy (not constituting notice) to:

Sheppard Mullin Richter & Hampton LLP  
Four Embarcadero Center, 17th Floor  
San Francisco, CA 94111  
Fax: 415-403-6050  
Attn: Thomas Reddy  
Email: TReddy@sheppardmullin.com

Each party hereto may from time to time change its address for notices under this Section 9 by giving at least 10 calendar days' notice of such changes address to the other party hereto.

**Section 10. Amendments and Waivers.**

This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought. This Warrant may only be amended by an instrument in writing signed by both parties.

**Section 11. Applicable Law; Severability.**

This Warrant shall be governed by and construed and enforced in accordance with the laws of the State of Delaware. If any one or more of the provisions contained in this Warrant, or any application of any provision thereof, shall be invalid, illegal, or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and all other applications of any provision thereof shall not in any way be affected or impaired thereby.

**Section 12. Construction; Headings.**

The terms "Exercise" and "Exchange" may be used interchangeably from time to time in this Warrant, the only substantive difference being that the exercise of rights under this Warrant by Exercise will require payment of cash consideration per share equal to the Exchange Price. The headings used in this Warrant are for the convenience of the parties only and shall not be used in construing the provisions hereof.

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IN WITNESS WHEREOF, the Company has caused this SECOND Amended and Restated Warrant to be duly executed on the day and year first above written.

COMPANY:

Giga-tronics Incorporated

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

ACKNOWLEDGED AND AGREED:

HOLDER:

PFG EQUITY INVESTORS, LLC

By: \_\_\_\_\_

\_\_\_\_\_, Manager

Warrant (2nd A&R) Signature Page

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Exhibit A

To:

ELECTION TO EXCHANGE OR EXERCISE

1. The undersigned hereby exercises its right to **Exchange** its Warrant for \_\_\_\_\_ fully paid, validly issued and nonassessable shares of Warrant Stock in accordance with the terms thereof.

1. The undersigned hereby elects to **Exercise** the attached Warrant for fully paid, validly issued and nonassessable shares of Warrant Stock by payment of \$ \_\_\_\_\_ as specified in the attached Warrant. This right is exercised with respect to \_\_\_\_\_ of shares.

[Strike the paragraph above that does not apply.]

The undersigned requests that certificates for such shares be issued in the name of, and delivered to:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. By its execution below and for the benefit of the Company, the undersigned hereby restates each of the representations and warranties in Section 7 of the Warrant as of the date hereof.

Date: \_\_\_\_\_

[Holder]

By \_\_\_\_\_  
Name:  
Title:

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Exhibit B  
ASSIGNMENT FORM

To:

The undersigned hereby assigns and transfers this Warrant to

\_\_\_\_\_  
(Insert assignee's social security or tax identification number)

\_\_\_\_\_  
(Print or type assignee's name, address and postal code)

and irrevocably appoints \_\_\_\_\_ to transfer this Warrant on the books of the Company.

Date: \_\_\_\_\_

PFG EQUITY INVESTORS, LLC

By \_\_\_\_\_  
Name: \_\_\_\_\_, Manager

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Exhibit C  
Articles of Incorporation

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Exhibit D  
Capitalization Table

	Fully Diluted	
	Shares	Ownership%
Common - Issued and Outstanding	8,584,169	38.2%
PFG Shares	360,000	1.6%
Common - Alara Warrants Exercised at \$1.43	1,010,034	4.5%
Common Shares issued to EGE for E-series	220,000	1.0%
<b>Total common outstanding</b>	<b>10,174,203</b>	<b>45.3%</b>
Alara Series B Preferred - As converted, liquidation preference of \$2.30	999,700	4.5%
Alara Series C Preferred - As converted, liquidation preference of \$1.46	342,465	1.5%
Alara Series D Preferred - As converted, liquidation preference of \$1.43	511,186	2.3%
Series E-As converted, assumes \$1.1M investment	4,400,000	19.6%
<b>Total converted preferred outstanding</b>	<b>6,253,351</b>	<b>27.9%</b>
Common Warrants - PFG at \$1.42 <b>will be repriced to 25 cents</b>	260,000	1.2%
Common Warrants - Alara at \$1.78	898,634	4.0%
Common Warrants - Alara at \$1.76	194,437	0.9%
Common Warrants - EGE Investors at \$1.15, <b>will be repriced to 25 cents</b>	2,090,904	9.3%
Common Warrants - EGE Commission at \$1.15, <b>will be repriced to 25 cents</b>	292,727	1.3%
<b>Total common warrants outstanding</b>	<b>3,736,702</b>	<b>16.6%</b>
Option Pool	1,231,777	5.5%
Common Stock Options Outstanding - Average price \$1.44	679,100	3.0%
Restricted Stock Awards Outstanding	375,450	1.7%
<b>Total Options outstanding</b>	<b>2,286,327</b>	
<b>Fully Diluted</b>	<b>22,450,583</b>	<b>100.0%</b>

## GIGA-TRONICS INCORPORATED

## SEVERANCE AGREEMENT

This Severance Agreement (the “**Agreement**”) is made and entered into by and between TIMOTHY URSPRUNG (“**Employee**”) and Giga-tronics Incorporated, a California Corporation (the “**Company**”), effective as of July 2, 2018 (the “**Effective Date**”). This Agreement supersedes any existing Severance Agreement or other agreement providing similar benefits between Employee and the Company.

RECITALS

1. It is expected that the Company from time to time will consider the possibility of an acquisition by another company or other change of control. The Board of Directors of the Company (the “**Board**”) recognizes that such consideration can be a distraction to Employee and can cause Employee to consider alternative employment opportunities. The Board has determined that it is in the best interests of the Company and its stockholders to assure that the Company will have the continued dedication and objectivity of Employee, notwithstanding the possibility, threat or occurrence of a Change of Control.
2. The Board believes that it is in the best interests of the Company and its stockholders to provide Employee with an incentive to continue his or her employment and to motivate Employee to maximize the value of the Company for the benefit of its stockholders.
3. The Board believes that it is imperative to provide Employee with certain benefits upon Employee’s termination of employment without cause or in connection with a Change of Control. These benefits will provide Employee with enhanced financial security and incentive and encouragement to remain with the Company.
4. Certain capitalized terms used in the Agreement are defined in Section 5 below.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

1. Term of Agreement. This Agreement will terminate upon the date that all of the obligations of the parties hereto with respect to this Agreement have been satisfied.
2. At-Will Employment. The Company and Employee acknowledge that Employee’s employment is and will continue to be at-will, as defined under applicable law, except as may otherwise be specifically provided under the terms of any written formal employment agreement or offer letter between the Company and Employee (an “**Employment Agreement**”). If Employee’s employment terminates for any reason, Employee will not be entitled to any payments, benefits, damages, awards or compensation other than as provided by this Agreement, including any payments or benefits Employee would otherwise be entitled to under his or her Employment Agreement.
3. Termination Benefits.

( a ) Involuntary Termination other than for Cause, Death or Disability. If the Company (or any parent or subsidiary of the Company employing Employee) terminates Employee’s employment with the Company (or any parent or subsidiary of the Company) without Employee’s consent and for a reason other than (x) Cause, (y) Employee becoming Disabled or (z) Employee’s death, (any such termination, an “**Involuntary Termination**”) and (with respect to subsections (ii) and (iii) below) Employee signs, delivers and does not revoke a separation agreement and release of claims in a form satisfactory to the Company (the “**Release**”) within the time period required by the Release (but in no event later than two and one-half (2½) months following the end of the calendar year in which the Involuntary Termination occurs), then following such termination of employment, or, if later, the effective date of the Release, Employee will receive the following payments and other benefits from the Company:

(i) Accrued Compensation. Employee will be entitled to receive all accrued vacation, expense reimbursements and any other benefits due to Employee through the date of termination of employment in accordance with the Company's then existing employee benefit plans, policies and arrangements.

(ii) Severance. Subject to Section 9(a), Employee will be entitled to receive continued payments of Employee's base salary (as in effect immediately prior to such termination and excluding any sales commissions, incentive compensation or other bonus or nonrecurring compensation) for a period of nine months, less applicable withholding payable in accordance with the Company's normal payroll policies.

(iii) Options. With respect to all of Employee's options (the "**Options**") to purchase Company common stock outstanding on the date of such termination (whether granted on, before or after the date of this Agreement), Employee will have the period following such termination of employment to exercise such Options that is specified in the stock plans, if any, under which the Options were granted and in any applicable agreements between the Company and Employee; provided, however, to the extent that, pursuant to the provisions of such stock plans and applicable agreements, such Options continue to vest during the period, if any, that Employee provides consulting services to the Company pursuant to Section 3(a)(ii) or otherwise, then Employee will have the period following the termination of such consulting services to exercise such Options that is specified in such stock plans and applicable agreements. In all other respects, such Options will continue to be subject to the terms and conditions of the stock plans, if any, under which they were granted and any applicable agreements between the Company and Employee.

(iv) Payments or Benefits Required by Law. Employee will receive such other compensation from the Company as may be required by law and will not be entitled to any other benefits from the Company except to the extent required by law (for example, "COBRA" coverage under Section 4980B of the Internal Revenue Code of 1986, as amended (the "**Code**")).

(b) Change of Control. If the Involuntary Termination occurs (i) within two months before the first public announcement of a proposed Change of Control that is completed (whether or not in the same form as first announced) or (ii) within twelve (12) months following a Change of Control, then the benefits provided in subsection (ii) ("Severance") shall be for a period of nine months after termination rather than any shorter period specified in such subsections.

(c) Other Terminations. If Employee voluntarily terminates Employee's employment with the Company or any parent or subsidiary of the Company (other than for Good Reason within twelve (12) months of a Change of Control) or if the Company (or any parent or subsidiary of the Company employing Employee) terminates Employee employment with the Company (or any parent or subsidiary of the Company) for Cause, then Employee will (i) receive his or her earned but unpaid base salary through the date of termination of employment, (ii) receive all accrued vacation, expense reimbursements and any other benefits due to Employee through the date of termination of employment in accordance with established Company plans, policies and arrangements, and (iii) not be entitled to any other compensation or benefits (including, without limitation, accelerated vesting of Options or Restricted Stock) from the Company except to the extent provided under the applicable stock option agreement(s) or as may be required by law (for example, "COBRA" coverage under Section 4980B of the Code).

(d) Termination due to Death or Disability. If Employee's employment with the Company (or any parent or subsidiary of the Company) is terminated due to Employee's death or Employee's becoming Disabled, then Employee or Employee's estate (as the case may be) will (i) receive the earned but unpaid base salary through the date of termination of employment, (ii) receive all accrued vacation, expense reimbursements and any other benefits due to Employee through the date of termination of employment in accordance with Company-provided or paid plans, policies and arrangements, and (iii) not be entitled to any other compensation or benefits from the Company except to the extent required by law (for example, "COBRA" coverage under Section 4980B of the Code).

(e) Exclusive Remedy. In the event of a termination of Employee's employment with the Company (or any parent or subsidiary of the Company), the provisions of this Section 3 are intended to be and are exclusive and in lieu of any other rights or remedies to which Employee or the Company may otherwise be entitled (including any contrary provisions in the Employment Agreement), whether at law, tort or contract, in equity, or under this Agreement. Employee will be entitled to no benefits, compensation or other payments or rights upon termination of employment other than those benefits expressly set forth in this Section 3.

4. Limitation on Payments. In the event that the severance and other benefits provided for in this Agreement or otherwise payable to Employee (i) constitute “parachute payments” within the meaning of Section 280G of the Code and (ii) but for this Section 4, would be subject to the excise tax imposed by Section 4999 of the Code, then Employee’s severance benefits under Section 4(a)(i) will be either:

(a) delivered in full, or

(b) delivered as to such lesser extent which would result in no portion of such severance benefits being subject to excise tax under Section 4999 of the Code,

whichever of the foregoing amounts, taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, results in the receipt by Employee on an after-tax basis, of the greatest amount of severance benefits, notwithstanding that all or some portion of such severance benefits may be taxable under Section 4999 of the Code. Unless the Company and Employee otherwise agree in writing, any determination required under this Section 4 will be made in writing by Armanino LLP or by a national “Big Four” accounting firm (the “**Accountants**”), whose determination will be conclusive and binding upon Employee and the Company for all purposes. For purposes of making the calculations required by this Section 4, the Accountants may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code. The Company and Employee will furnish to the Accountants such information and documents as the Accountants may reasonably request in order to make a determination under this Section. The Company will bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Section 4.

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

(a) Cause. “**Cause**” means (i) a willful failure by Employee to substantially perform Employee’s duties as an employee, other than a failure resulting from the Employee’s complete or partial incapacity due to physical or mental illness or impairment, (ii) a willful act by Employee that constitutes gross misconduct and that is injurious to the Company, (iii) circumstances where Employee willfully imparts material confidential information relating to the Company or its business to competitors or to other third parties other than in the course of carrying out Employee’s duties, (iv) a material and willful violation by Employee of a federal or state law or regulation applicable to the business of the Company that is injurious to the Company, or (v) Employee’s conviction or plea of guilty or no contest to a felony, which the Company reasonably believes has or will negatively reflect on the Company’s business or reputation. No act or failure to act by Employee will be considered “willful” unless committed without good faith and without a reasonable belief that the act or omission was in the Company’s best interest.

(b) Change of Control. “**Change of Control**” means the occurrence of any of the following:

(i) the sale, lease, conveyance or other disposition of all or substantially all of the Company’s assets to any “person” (as such term is used in Section 13(d) of the Securities Exchange Act of 1934, as amended), entity or group of persons acting in concert;

(ii) any person or group of persons becoming the “beneficial owner” (as defined in Rule 13d-3 under said Act), directly or indirectly, of securities of the Company representing 50% or more of the total voting power represented by the Company’s then outstanding voting securities;

(iii) a merger or consolidation of the Company with any other corporation, other than a merger or consolidation that would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its controlling entity) at least 50% of the total voting power represented by the voting securities of the Company or such surviving entity (or its controlling entity) outstanding immediately after such merger or consolidation; or



(iv) a contest for the election or removal of members of the Board that results in the removal from the Board of at least 50% of the incumbent members of the Board.

(c) [Reserved].

(d) Disability. “**Disability**” will mean that Employee has been unable to perform the principal functions of Employee’s duties due to a physical or mental impairment, but only if such inability has lasted or is reasonably expected to last for at least six months. Whether Employee has a Disability will be determined by the Board based on evidence provided by one or more physicians selected by the Board.

(e) Good Reason. “**Good Reason**” means the occurrence of any of the following without the Employee’s consent: (i) a material diminution in Employee’s Base Salary, except for reductions that are in proportion to any salary reduction program approved by the Board that affects a majority of the senior executives of the Company; (ii) a material diminution in Employee’s authority, duties, or responsibilities; (iii) a material diminution in the authority, duties, or responsibilities of the supervisor to whom Employee is required to report, including a requirement that Employee report to a corporate officer or employee instead of reporting directly to the Board; (iv) a material change in the geographic location at which Employee must perform his services of not less than fifty (50) miles from the Company’s primary place of business immediately prior to such relocation; or (v) any other action or inaction that constitutes a material breach by the Company of this Agreement.

(f) Section 409A Limit. “**Section 409A Limit**” means the lesser of two (2) times: (i) Employee’s annualized compensation based upon the annual rate of pay paid to Employee during the Company’s taxable year preceding the Company’s taxable year of Employee’s termination of employment as determined under Treasury Regulation 1.409A-1(b)(9)(iii)(A)(1) and any Internal Revenue Service guidance issued with respect thereto; or (ii) the maximum amount that may be taken into account under a qualified plan pursuant to Section 401(a)(17) of the Code for the year in which Employee’s employment is terminated.

6. Non-Solicitation; Confidential Information. For a period beginning on the Effective Date and ending six (6) months after Employee ceases to be employed by the Company, Employee, directly or indirectly, whether as employee, owner, sole proprietor, partner, director, member, consultant, agent, founder, co-venturer or otherwise, will not: solicit, induce or influence any person to leave employment with the Company. At no time will Employee use proprietary Company information, including confidential information about any customers to directly or indirectly solicit business from any of the Company’s customers and users on behalf of any business that competes with the principal business of the Company. The foregoing shall not preclude Employee from becoming employed by a business that competes with the Company so long as proprietary Company information, including confidential information about customers, is not disclosed to or used by the competing business or by Employee for the benefit of the competing business.

7. Successors.

(a) The Company’s Successors. Any successor to the Company (whether direct or indirect and whether by purchase, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company’s business and/or assets will assume the obligations under this Agreement and agree expressly to perform the obligations under this Agreement in the same manner and to the same extent as the Company would be required to perform such obligations in the absence of a succession. For all purposes under this Agreement, the term “**Company**” will include any successor to the Company’s business and/or assets which executes and delivers the assumption agreement described in this Section 7(a) or which becomes bound by the terms of this Agreement by operation of law.

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

8. Notice.

(a) General. Notices and all other communications contemplated by this Agreement will be in writing and will be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid. In the case of Employee, mailed notices will be addressed to him or her at the home address which he or she most recently communicated to the Company in writing. In the case of the Company, mailed notices will be addressed to its corporate headquarters, and all notices will be directed to the attention of its President.

(b) Notice of Termination. Any termination by the Company for Cause or by Employee for Good Reason or as a result of a voluntary resignation will be communicated by a notice of termination to the other party hereto given in accordance with Section 8(a) of this Agreement. Such notice will indicate the specific termination provision in this Agreement relied upon, will set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination under the provision so indicated, and will specify the termination date (which will be not more than thirty (30) days after the giving of such notice). The failure by Employee to include in the notice any fact or circumstance which contributes to a showing of Good Reason will not waive any right of Employee hereunder or preclude Employee from asserting such fact or circumstance in enforcing his or her rights hereunder.

9. Miscellaneous Provisions.

(a) Code Section 409A. Notwithstanding anything to the contrary in this Agreement, if Employee is a “specified employee” within the meaning of Section 409A of the Code and any final regulations and guidance promulgated thereunder, as they each may be amended from time to time (“**Section 409A**”) at the time of Employee’s termination other than due to Employee’s death (provided that such termination is a “separation from service” within the meaning of Section 409A, as determined by the Company), then only that portion of the cash severance and shares subject to accelerated RSUs payable to Employee pursuant to this Agreement, if any, and any other severance payments or separation benefits, in each case which may be considered deferred compensation under Section 409A (together, the “**Deferred Compensation Separation Benefits**”), which (when considered together) do not exceed the Section 409A Limit (as defined herein) may be made within the first six (6) months following Employee’s termination of employment in accordance with the payment schedule applicable to each payment or benefit. Any portion of the Deferred Compensation Separation Benefits in excess of the Section 409A Limit otherwise due to Employee on or within the six (6) month period following Employee’s termination will accrue during such six (6) month period and will become payable in a lump sum payment on the date six (6) months and one (1) day following the date of Employee’s termination of employment. All subsequent Deferred Compensation Separation Benefits, if any, will be payable in accordance with the payment schedule applicable to each payment or benefit. Notwithstanding anything herein to the contrary, if Employee dies following his termination but prior to the six month anniversary of his date of termination, then any payments delayed in accordance with this paragraph will be payable in a lump sum as soon as administratively practicable after the date of Employee’s death and all other Deferred Compensation Separation Benefits will be payable in accordance with the payment schedule applicable to each payment or benefit. It is the intent of this Agreement to comply with the requirements of Section 409A so that none of the severance payments and benefits to be provided hereunder will be subject to the additional tax imposed under Section 409A, and any ambiguities herein will be interpreted to so comply.

(b) No Duty to Mitigate. Employee will not be required to mitigate the amount of any payment contemplated by this Agreement, nor will any such payment be reduced by any earnings that Employee may receive from any other source.

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

(d) Headings. All captions and section headings used in this Agreement are for convenient reference only and do not form a part of this Agreement.

(e) Entire Agreement. This Agreement constitutes the entire agreement of the parties hereto and supersedes in their entirety all prior representations, understandings, undertakings or agreements (whether oral or written and whether expressed or implied) of the parties with respect to the subject matter hereof, including (without limitation) the Employment Agreement. No future agreements between the Company and Employee may supersede this Agreement, unless they are in writing and specifically mention this Agreement. With respect to equity awards granted on or after the date hereof, the acceleration of vesting provided herein will apply to such awards except to the extent otherwise explicitly provided in the applicable equity award agreement, which provision must include a reference to this Agreement.

( f ) Choice of Law. The laws of the State of California (without reference to its choice of law provisions) will govern the validity, interpretation, construction and performance of this Agreement.

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

(h) Withholding. All payments made pursuant to this Agreement will be subject to withholding of applicable income and employment taxes.

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

*[Remainder of Page Intentionally Left Blank]*

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

COMPANY

GIGA-TRONICS INCORPORATED

By: \_\_\_\_\_

Title: CEO \_\_\_\_\_

EMPLOYEE

\_\_\_\_\_  
Name: TIMOTHY URSPRUNG \_\_\_\_\_

## GIGA-TRONICS INCORPORATED

## SEVERANCE AGREEMENT

This Severance Agreement (the “**Agreement**”) is made and entered into by and between LUTZ P. HENCKELS (“**Employee**”) and Giga-tronics Incorporated, a California Corporation (the “**Company**”), effective as of April 11, 2019 (the “**Effective Date**”). This Agreement supersedes any existing Severance Agreement or other agreement providing similar benefits between Employee and the Company.

RECITALS

1. It is expected that the Company from time to time will consider the possibility of an acquisition by another company or other change of control. The Board of Directors of the Company (the “**Board**”) recognizes that such consideration can be a distraction to Employee and can cause Employee to consider alternative employment opportunities. The Board has determined that it is in the best interests of the Company and its stockholders to assure that the Company will have the continued dedication and objectivity of Employee, notwithstanding the possibility, threat or occurrence of a Change of Control.
2. The Board believes that it is in the best interests of the Company and its stockholders to provide Employee with an incentive to continue his or her employment and to motivate Employee to maximize the value of the Company for the benefit of its stockholders.
3. The Board believes that it is imperative to provide Employee with certain benefits upon Employee’s termination of employment without cause or in connection with a Change of Control. These benefits will provide Employee with enhanced financial security and incentive and encouragement to remain with the Company.
4. Certain capitalized terms used in the Agreement are defined in Section 5 below.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

1. Term of Agreement. This Agreement will terminate upon the date that all of the obligations of the parties hereto with respect to this Agreement have been satisfied.
2. At-Will Employment. The Company and Employee acknowledge that Employee’s employment is and will continue to be at-will, as defined under applicable law, except as may otherwise be specifically provided under the terms of any written formal employment agreement or offer letter between the Company and Employee (an “**Employment Agreement**”). If Employee’s employment terminates for any reason, Employee will not be entitled to any payments, benefits, damages, awards or compensation other than as provided by this Agreement, including any payments or benefits Employee would otherwise be entitled to under his or her Employment Agreement.
3. Termination Benefits.

( a ) Involuntary Termination other than for Cause, Death or Disability. If the Company (or any parent or subsidiary of the Company employing Employee) terminates Employee’s employment with the Company (or any parent or subsidiary of the Company) without Employee’s consent and for a reason other than (x) Cause, (y) Employee becoming Disabled or (z) Employee’s death, (any such termination, an “**Involuntary Termination**”) and (with respect to subsections (ii) and (iii) below) Employee signs, delivers and does not revoke a separation agreement and release of claims in a form satisfactory to the Company (the “**Release**”) within the time period required by the Release (but in no event later than two and one-half (2½) months following the end of the calendar year in which the Involuntary Termination occurs), then following such termination of employment, or, if later, the effective date of the Release, Employee will receive the following payments and other benefits from the Company:

(i) Accrued Compensation. Employee will be entitled to receive all accrued vacation, expense reimbursements and any other benefits due to Employee through the date of termination of employment in accordance with the Company's then existing employee benefit plans, policies and arrangements.

(ii) Severance. Subject to Section 9(a), Employee will be entitled to receive continued payments of Employee's base salary (as in effect immediately prior to such termination and excluding any sales commissions, incentive compensation or other bonus or nonrecurring compensation) for a period of nine months, less applicable withholding payable in accordance with the Company's normal payroll policies.

(iii) Options. With respect to all of Employee's options (the "Options") to purchase Company common stock outstanding on the date of such termination (whether granted on, before or after the date of this Agreement), Employee will have the period following such termination of employment to exercise such Options that is specified in the stock plans, if any, under which the Options were granted and in any applicable agreements between the Company and Employee; provided, however, to the extent that, pursuant to the provisions of such stock plans and applicable agreements, such Options continue to vest during the period, if any, that Employee provides consulting services to the Company pursuant to Section 3(a)(ii) or otherwise, then Employee will have the period following the termination of such consulting services to exercise such Options that is specified in such stock plans and applicable agreements. In all other respects, such Options will continue to be subject to the terms and conditions of the stock plans, if any, under which they were granted and any applicable agreements between the Company and Employee.

(iv) Payments or Benefits Required by Law. Employee will receive such other compensation from the Company as may be required by law and will not be entitled to any other benefits from the Company except to the extent required by law (for example, "COBRA" coverage under Section 4980B of the Internal Revenue Code of 1986, as amended (the "Code")).

(b) Change of Control. If the Involuntary Termination occurs (i) within two months before the first public announcement of a proposed Change of Control that is completed (whether or not in the same form as first announced) or (ii) within twelve (12) months following a Change of Control, then the benefits provided in subsection (ii) ("Severance") shall be for a period of nine months after termination rather than any shorter period specified in such subsections.

(c) Other Terminations. If Employee voluntarily terminates Employee's employment with the Company or any parent or subsidiary of the Company (other than for Good Reason within twelve (12) months of a Change of Control) or if the Company (or any parent or subsidiary of the Company employing Employee) terminates Employee employment with the Company (or any parent or subsidiary of the Company) for Cause, then Employee will (i) receive his or her earned but unpaid base salary through the date of termination of employment, (ii) receive all accrued vacation, expense reimbursements and any other benefits due to Employee through the date of termination of employment in accordance with established Company plans, policies and arrangements, and (iii) not be entitled to any other compensation or benefits (including, without limitation, accelerated vesting of Options or Restricted Stock) from the Company except to the extent provided under the applicable stock option agreement(s) or as may be required by law (for example, "COBRA" coverage under Section 4980B of the Code).

(d) Termination due to Death or Disability. If Employee's employment with the Company (or any parent or subsidiary of the Company) is terminated due to Employee's death or Employee's becoming Disabled, then Employee or Employee's estate (as the case may be) will (i) receive the earned but unpaid base salary through the date of termination of employment, (ii) receive all accrued vacation, expense reimbursements and any other benefits due to Employee through the date of termination of employment in accordance with Company-provided or paid plans, policies and arrangements, and (iii) not be entitled to any other compensation or benefits from the Company except to the extent required by law (for example, "COBRA" coverage under Section 4980B of the Code).

(e) Exclusive Remedy. In the event of a termination of Employee's employment with the Company (or any parent or subsidiary of the Company), the provisions of this Section 3 are intended to be and are exclusive and in lieu of any other rights or remedies to which Employee or the Company may otherwise be entitled (including any contrary provisions in the Employment Agreement), whether at law, tort or contract, in equity, or under this Agreement. Employee will be entitled to no benefits, compensation or other payments or rights upon termination of employment other than those benefits expressly set forth in this Section 3.

4. Limitation on Payments. In the event that the severance and other benefits provided for in this Agreement or otherwise payable to Employee (i) constitute “parachute payments” within the meaning of Section 280G of the Code and (ii) but for this Section 4, would be subject to the excise tax imposed by Section 4999 of the Code, then Employee’s severance benefits under Section 4(a)(i) will be either:

(a) delivered in full, or

(b) delivered as to such lesser extent which would result in no portion of such severance benefits being subject to excise tax under Section 4999 of the Code,

whichever of the foregoing amounts, taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, results in the receipt by Employee on an after-tax basis, of the greatest amount of severance benefits, notwithstanding that all or some portion of such severance benefits may be taxable under Section 4999 of the Code. Unless the Company and Employee otherwise agree in writing, any determination required under this Section 4 will be made in writing by Armanino LLP or by a national “Big Four” accounting firm (the “**Accountants**”), whose determination will be conclusive and binding upon Employee and the Company for all purposes. For purposes of making the calculations required by this Section 4, the Accountants may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code. The Company and Employee will furnish to the Accountants such information and documents as the Accountants may reasonably request in order to make a determination under this Section. The Company will bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Section 4.

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

(a) Cause. “**Cause**” means (i) a willful failure by Employee to substantially perform Employee’s duties as an employee, other than a failure resulting from the Employee’s complete or partial incapacity due to physical or mental illness or impairment, (ii) a willful act by Employee that constitutes gross misconduct and that is injurious to the Company, (iii) circumstances where Employee willfully imparts material confidential information relating to the Company or its business to competitors or to other third parties other than in the course of carrying out Employee’s duties, (iv) a material and willful violation by Employee of a federal or state law or regulation applicable to the business of the Company that is injurious to the Company, or (v) Employee’s conviction or plea of guilty or no contest to a felony, which the Company reasonably believes has or will negatively reflect on the Company’s business or reputation. No act or failure to act by Employee will be considered “willful” unless committed without good faith and without a reasonable belief that the act or omission was in the Company’s best interest.

(b) Change of Control. “**Change of Control**” means the occurrence of any of the following:

(i) the sale, lease, conveyance or other disposition of all or substantially all of the Company’s assets to any “person” (as such term is used in Section 13(d) of the Securities Exchange Act of 1934, as amended), entity or group of persons acting in concert;

(ii) any person or group of persons becoming the “beneficial owner” (as defined in Rule 13d-3 under said Act), directly or indirectly, of securities of the Company representing 50% or more of the total voting power represented by the Company’s then outstanding voting securities;

(iii) a merger or consolidation of the Company with any other corporation, other than a merger or consolidation that would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its controlling entity) at least 50% of the total voting power represented by the voting securities of the Company or such surviving entity (or its controlling entity) outstanding immediately after such merger or consolidation; or

(iv) a contest for the election or removal of members of the Board that results in the removal from the Board of at least 50% of the incumbent members of the Board.

(c) [Reserved].

(d) Disability. “**Disability**” will mean that Employee has been unable to perform the principal functions of Employee’s duties due to a physical or mental impairment, but only if such inability has lasted or is reasonably expected to last for at least six months. Whether Employee has a Disability will be determined by the Board based on evidence provided by one or more physicians selected by the Board.

(e) Good Reason. “**Good Reason**” means the occurrence of any of the following without the Employee’s consent: (i) a material diminution in Employee’s Base Salary, except for reductions that are in proportion to any salary reduction program approved by the Board that affects a majority of the senior executives of the Company; (ii) a material diminution in Employee’s authority, duties, or responsibilities; (iii) a material diminution in the authority, duties, or responsibilities of the supervisor to whom Employee is required to report, including a requirement that Employee report to a corporate officer or employee instead of reporting directly to the Board; (iv) a material change in the geographic location at which Employee must perform his services of not less than fifty (50) miles from the Company’s primary place of business immediately prior to such relocation; or (v) any other action or inaction that constitutes a material breach by the Company of this Agreement.

(f) Section 409A Limit. “**Section 409A Limit**” means the lesser of two (2) times: (i) Employee’s annualized compensation based upon the annual rate of pay paid to Employee during the Company’s taxable year preceding the Company’s taxable year of Employee’s termination of employment as determined under Treasury Regulation 1.409A-1(b)(9)(iii)(A)(1) and any Internal Revenue Service guidance issued with respect thereto; or (ii) the maximum amount that may be taken into account under a qualified plan pursuant to Section 401(a)(17) of the Code for the year in which Employee’s employment is terminated.

6. Non-Solicitation; Confidential Information. For a period beginning on the Effective Date and ending six (6) months after Employee ceases to be employed by the Company, Employee, directly or indirectly, whether as employee, owner, sole proprietor, partner, director, member, consultant, agent, founder, co-venturer or otherwise, will not: solicit, induce or influence any person to leave employment with the Company. At no time will Employee use proprietary Company information, including confidential information about any customers to directly or indirectly solicit business from any of the Company’s customers and users on behalf of any business that competes with the principal business of the Company. The foregoing shall not preclude Employee from becoming employed by a business that competes with the Company so long as proprietary Company information, including confidential information about customers, is not disclosed to or used by the competing business or by Employee for the benefit of the competing business.

7. Successors.

(a) The Company’s Successors. Any successor to the Company (whether direct or indirect and whether by purchase, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company’s business and/or assets will assume the obligations under this Agreement and agree expressly to perform the obligations under this Agreement in the same manner and to the same extent as the Company would be required to perform such obligations in the absence of a succession. For all purposes under this Agreement, the term “**Company**” will include any successor to the Company’s business and/or assets which executes and delivers the assumption agreement described in this Section 7(a) or which becomes bound by the terms of this Agreement by operation of law.

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



8. Notice.

(a) General. Notices and all other communications contemplated by this Agreement will be in writing and will be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid. In the case of Employee, mailed notices will be addressed to him or her at the home address which he or she most recently communicated to the Company in writing. In the case of the Company, mailed notices will be addressed to its corporate headquarters, and all notices will be directed to the attention of its President.

(b) Notice of Termination. Any termination by the Company for Cause or by Employee for Good Reason or as a result of a voluntary resignation will be communicated by a notice of termination to the other party hereto given in accordance with Section 8(a) of this Agreement. Such notice will indicate the specific termination provision in this Agreement relied upon, will set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination under the provision so indicated, and will specify the termination date (which will be not more than thirty (30) days after the giving of such notice). The failure by Employee to include in the notice any fact or circumstance which contributes to a showing of Good Reason will not waive any right of Employee hereunder or preclude Employee from asserting such fact or circumstance in enforcing his or her rights hereunder.

9. Miscellaneous Provisions.

(a) Code Section 409A. Notwithstanding anything to the contrary in this Agreement, if Employee is a “specified employee” within the meaning of Section 409A of the Code and any final regulations and guidance promulgated thereunder, as they each may be amended from time to time (“**Section 409A**”) at the time of Employee’s termination other than due to Employee’s death (provided that such termination is a “separation from service” within the meaning of Section 409A, as determined by the Company), then only that portion of the cash severance and shares subject to accelerated RSUs payable to Employee pursuant to this Agreement, if any, and any other severance payments or separation benefits, in each case which may be considered deferred compensation under Section 409A (together, the “**Deferred Compensation Separation Benefits**”), which (when considered together) do not exceed the Section 409A Limit (as defined herein) may be made within the first six (6) months following Employee’s termination of employment in accordance with the payment schedule applicable to each payment or benefit. Any portion of the Deferred Compensation Separation Benefits in excess of the Section 409A Limit otherwise due to Employee on or within the six (6) month period following Employee’s termination will accrue during such six (6) month period and will become payable in a lump sum payment on the date six (6) months and one (1) day following the date of Employee’s termination of employment. All subsequent Deferred Compensation Separation Benefits, if any, will be payable in accordance with the payment schedule applicable to each payment or benefit. Notwithstanding anything herein to the contrary, if Employee dies following his termination but prior to the six month anniversary of his date of termination, then any payments delayed in accordance with this paragraph will be payable in a lump sum as soon as administratively practicable after the date of Employee’s death and all other Deferred Compensation Separation Benefits will be payable in accordance with the payment schedule applicable to each payment or benefit. It is the intent of this Agreement to comply with the requirements of Section 409A so that none of the severance payments and benefits to be provided hereunder will be subject to the additional tax imposed under Section 409A, and any ambiguities herein will be interpreted to so comply.

(b) No Duty to Mitigate. Employee will not be required to mitigate the amount of any payment contemplated by this Agreement, nor will any such payment be reduced by any earnings that Employee may receive from any other source.

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

(d) Headings. All captions and section headings used in this Agreement are for convenient reference only and do not form a part of this Agreement.

(e) Entire Agreement. This Agreement constitutes the entire agreement of the parties hereto and supersedes in their entirety all prior representations, understandings, undertakings or agreements (whether oral or written and whether expressed or implied) of the parties with respect to the subject matter hereof, including (without limitation) the Employment Agreement. No future agreements between the Company and Employee may supersede this Agreement, unless they are in writing and specifically mention this Agreement. With respect to equity awards granted on or after the date hereof, the acceleration of vesting provided herein will apply to such awards except to the extent otherwise explicitly provided in the applicable equity award agreement, which provision must include a reference to this Agreement.

( f ) Choice of Law. The laws of the State of California (without reference to its choice of law provisions) will govern the validity, interpretation, construction and performance of this Agreement.

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

(h) Withholding. All payments made pursuant to this Agreement will be subject to withholding of applicable income and employment taxes.

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

*[Remainder of Page Intentionally Left Blank]*

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

COMPANY

GIGA-TRONICS INCORPORATED

By: \_\_\_\_\_

Title: \_\_\_\_\_ CEO \_\_\_\_\_

EMPLOYEE

\_\_\_\_\_

Name: LUTZ P. HENCKELS \_\_\_\_\_

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements of Giga-tronics Incorporated on Form S-1 (File No. 333-227874, effective October 19, 2018), Form S-8 (File No. 333-227872, effective October 17, 2018; File No. 333-135578, effective July 3, 2006; File No. 333-69688, effective September 24, 2001; File No. 333-45476, effective September 8, 2000; File No. 333-48889, effective March 30, 1998; File No. 333-39403, effective November 5, 1997; File No. 333-34719, effective August 29, 1997) and Form S-3 (File No. 333-210157, effective March 21, 2016; File No. 333-205051, effective August 20, 2015) of our report dated May 30, 2019, with respect to the consolidated balance sheet of Giga-tronics Incorporated and subsidiary as of March 30, 2019, and the related consolidated statements of operations, shareholders' equity, and cash flows for the year then ended, which report appears in the March 30, 2019 annual report on Form 10-K of Giga-tronics Incorporated.

/s/ Armanino<sup>LLP</sup>  
San Ramon, California

May 30, 2019

**CERTIFICATIONS UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, John R. Regazzi, certify that:

1. I have reviewed this Annual Report on Form 10-K of Giga-tronics Incorporated;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: 05/30/2019

/s/ JOHN R. REGAZZI  
John R. Regazzi  
Chief Executive Officer

**CERTIFICATIONS UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Lutz P. Henckels, certify that:

1. I have reviewed this Annual Report on Form 10-K of Giga-tronics Incorporated;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: 05/30/2019

/s/ LUTZ P. HENCKELS  
Lutz P. Henckels  
Principal Financial Officer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Giga-tronics Incorporated (the "Company") on Form 10-K for the period ending March 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, John R. Regazzi, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: 05/30/2019

/s/ JOHN R. REGAZZI

John R. Regazzi  
Chief Executive Officer

EXHIBIT 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Giga-tronics Incorporated (the "Company") on Form 10-K for the period ending March 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Lutz P. Henckels, Principal Financial Officer, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: 05/30/2019

/s/ LUTZ P. HENCKELS

Lutz P. Henckels  
Principal Financial Officer