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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2017

OR

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

For the transition period from to

Commission file number 001-36467

RESONANT INC.

(Exact Name of Registrant as Specified in Its charter)

Delaware	**45-4320930**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)

110 Castilian Drive, Suite 100, Goleta, California 93117

(Address of Principal Executive Offices) (Zip Code)

(805) 308-9803

(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Name of each exchange on which registered
Common Stock, $0.001 par value	The NASDAQ Stock Market LLC

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

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

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

Large accelerated filer ☐	Accelerated filer ☐
Non-accelerated filer ☐ (Do not check if smaller reporting company)	Smaller reporting company ☒

Emerging growth company ☒

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

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

As of June 30, 2017, the aggregate market value of the voting and non-voting common equity held by non-affiliates was $46 million, based on the closing price on that date. As of February 26, 2018, the registrant had 19,911,602 shares of common stock issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

None

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements. These forward-looking statements include, but are not limited to, statements concerning the following:

- *the status of filter designs under development;*
- *the prospects for licensing filter designs upon completion of development;*
- *plans for other filter designs not currently in development;*
- *potential customers for our designs;*
- *the timing and amount of future royalty streams;*
- *our plans regarding the use of proceeds from our financings and the expected duration of our capital resources;*
- *our plans regarding future financings;*
- *our hiring plans;*
- *the impact of our designs on the mobile device market;*
- *our business strategy;*
- *our intentions, expectations and beliefs regarding anticipated growth, market penetration and trends in our business;*
- *the timing and success of our plan of commercialization;*
- *our dependence on growth in our customers' businesses;*
- *our customers' success in marketing products incorporating our designs to their customers;*
- *the effects of market conditions on our stock price and operating results;*
- *our ability to maintain our competitive technological advantages against competitors in our industry and the related costs associated with defending intellectual property infringement and other claims;*
- *our ability to timely and effectively adapt our existing technology and have our technology solutions gain market acceptance;*
- *our ability to introduce new offerings and bring them to market in a timely manner;*
- *our ability to maintain, protect and enhance our intellectual*

property;

- *our expectations concerning our relationships with our customers and other third parties and our customers' relationships with their manufacturers and customers;*

- *the attraction and retention of qualified employees and key personnel;*

- *future acquisitions of or investments in complementary companies or technologies; and*

- *our ability to comply with evolving legal standards and regulations, particularly concerning requirements for being a public company and United States export regulations.*

These forward-looking statements speak only as of the date of this Form 10-K and are subject to uncertainties, assumptions and business and economic risks. As such, our actual results could differ materially from those set forth in the forward-looking statements as a result of the factors set forth below in Part I, Item 1A, "Risk Factors," and in our other reports filed with the Securities and Exchange Commission. Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for us to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Form 10-K may not occur, and actual results could differ materially and adversely from those anticipated or implied in our forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this Form 10-K to conform these statements to actual results or to changes in our expectations, except as required by law.

You should read this Annual Report on Form 10-K and the documents that we reference in this Annual Report on Form 10-K and have filed with the Securities and Exchange Commission as exhibits thereto with the understanding that our actual future results and circumstances may be materially different from what we expect.

PART I

ITEM 1. BUSINESS

Overview

Resonant is a late-stage development company that has created an innovative software, intellectual property, or IP, and services platform that has the ability to increase designer efficiency, reduce the time to market and lower unit costs in the designs of filters for radio frequency, or RF, front-ends for the mobile device industry. The RF front-end, or RFFE, is the circuitry in a mobile device responsible for analog signal processing and is located between the device's antenna and its digital circuitry. The software platform we are developing is based on fundamentally new technology that we call Infinite Synthesized Networks®, or ISN®, to configure and connect resonators, the building blocks of RF filters. Filters are a critical component of the RF front-end used to select desired radio frequency signals and reject unwanted signals. Our ISN® platform allows us to develop unique, custom designs that address the increasing complexity of the RFFE due to carrier aggregation (the combining of multiple frequencies into a single data stream to increase throughput through higher data rates), or CA, by both reducing the size of the filter and improving performance. Our goal is to utilize our ISN® platform to support our customers in reducing their time to develop complex filter and module designs, to access new classes of filter designs, and to do it more cost effectively.

We are commercializing our technology through the creation of filter designs that address the problems in the high growth RFFE industry created by the growing number of frequency bands in mobile devices. The worldwide adoption of Long Term Evolution, or LTE, as the global standard, and the use of mobile devices to access the Internet, has resulted in massive proliferation of frequency bands which, when combined with CA for higher data rates and multiple input multiple output, or MIMO, has resulted in an ever-increasing number and complexity of filters in the RFFE. We have developed and continue to expand a series of single-band designs for frequency bands presently dominated by larger and more expensive bulk acoustic wave, or BAW, filters. We are also developing multiplexer filter designs for two or more bands to address the CA requirements of our customers. We are using our ISN® platform to efficiently integrate these designs into RF modules for our module customers. Finally, we are developing unique filter designs, enabled by ISN®, to replace multiple filters and associated componentry for many bands, with higher performance. Currently, we are leveraging ISN® to develop these designs targeted for either the Surface Acoustic Wave (SAW) or Temperature Compensated, Surface Acoustic Wave (TC-SAW) manufacturing processes. In order to succeed, we must convince RFFE suppliers that our filter designs can significantly reduce the size and cost of their products.

We believe licensing our designs is the most direct and effective means of validating our ISN® platform and related IP libraries to address this rapidly growing market. Our target customers make part or all of the RFFE. We intend to retain ownership of our designs, and we expect to be compensated through license fees and royalties based on sales of RFFE filters that incorporate our designs. We currently do not intend to manufacture or sell any physical products or operate as a contract design company developing designs for a fee.

Our typical customer engagement process begins with the execution of a Joint Development Agreement, or JDA, and License Agreement, or LA, which provides for a typical development cycle of six to nine months, for specific bands. Depending on the complexity of the design, we estimate that initial samples of products to original equipment manufacturers, or OEMs, will occur typically within nine to thirty-six months following execution of a license agreement. We classify these new designs as either ISN Ready (9-12 months), ISN Pilot (12-18 months), ISN Advanced (18-36 months) or ISN Development (Custom). It is following these development cycles that designs are manufactured and sampled to OEM customers. OEMs can take from three to six months, or longer, to qualify a design as fit for use, reliable and ready for mass production. The point at which an OEM begins taking product from our customers in mass production is typically when royalty revenues would begin. Our customer agreements typically provide for upfront design fees and royalty payments for each unit sold using our filter designs and typically last for a minimum of two years, and in many cases for the life of the design.

We began 2016 with no customers under contract and no license agreements. We ended 2016 with six customers and more than 25 designs under contract. These included a wide range of complex designs ranging from sophisticated "WiFi Co-existence" filters to high frequency duplexers and quadplexers. In late 2016, we expanded our customer focus beyond just filter manufacturers. Through the capabilities provided by our ISN® platform, we enabled a new class of customer - fabless filter manufacturers. These companies do not have their own internal filter fabrication facility, or Fab, and typically already would be supplying other products in the RFFE to the OEMs and as a result do not require a protracted, new vendor, qualification process in order to supply parts. It is through our existing customer relationships that we are able to facilitate these third-party Fab relationships, that leverage our ISN®tools to deliver cutting edge filter designs to these fabless filter customers.

During 2017, we continued to expand our engagements with existing customers while identifying and contracting with new customers and as a result, ended the year with eight total customers and more than double the number of contracted designs. In many cases the expansion in the number of contracted sockets came from customers who already had a significant investment in working with Resonant and confidence in the capabilities of the ISN® platform.

Also, in 2017, in order to further facilitate our fabless filter program, and to provide manufacturing stability across the supply chain to our fully integrated filter customers, we embarked on the creation of our ISN® Foundry Program. Foundries joining Resonant's program first complete a foundry evaluation process to ensure alignment with our customers for filter performance, manufacturing quality and capacity, and business practices. Once the evaluation is completed, the foundry runs a characterization lot, used to create a foundry process design kit, after which, we are ready to start designs for manufacture in the foundry. Packaging/Back-end vendors can also join the program by completing a back-end evaluation process to match their capabilities with foundry partners and our customers. It is through this program that we can enable a secure supply chain for all our customers.

We plan to continue to pursue filter design projects with existing and potential customers and other strategic partners. These types of arrangements may subsidize the expansion of our IP libraries and further the development of our ISN® platform, as well as offer complementary technology and market intelligence. We are also investigating the potential of licensing part or all of our ISN® software design suite to potential customers in the RFFE industry. However, we intend to retain ownership of our technology, software, designs and related improvements. Our goal is to establish and leverage alliances with new and existing customers, who will help grow the market for our designs by integrating them with their own proprietary technology and products, or by using our software products for their own designs, thus combining their own particular strengths with ours to provide an extensive array of solutions.

Our History

Our technology originated at Superconductor Technologies Inc., or STI. STI commercialized this technology in high temperature superconductors by developing unique RF filter technology and creating high performance RF filters for cellular towers. When STI halted work on the RF filter program in 2010 in order to devote its resources to the development of high temperature superconducting wire, Dr. Hammond, STI's Chief Technology Officer, along with Terry Lingren, then serving as Vice President of Engineering at Kyocera Communications, Inc., and Neal Fenzi, who was then serving as Chief Engineer at STI, co-founded Resonant in order to continue to develop the RF filters that STI initiated. In May 2012, Resonant LLC was formed in California. We commenced business on July 6, 2012 with initial contributions from our founders and STI. We changed from a limited liability company to a corporation in an exchange transaction in June 2013. We completed our IPO on May 29, 2014.

In July 2016, we acquired all of the issued and outstanding capital stock of GVR Trade S.A., or GVR, for a purchase price of approximately $1.2 million consisting of $661,000 in cash and 125,000 shares of our common stock. GVR is a Swiss-based company specializing in the consultation and design of SAW and BAW devices. We believe the acquisition was a logical extension to the existing long-term cooperation between our two companies and continues to enhance our ability to support licensing agreements for both current and future partners and customers. GVR is a wholly owned subsidiary of Resonant.

Industry Background

Glossary

The following is a glossary of useful terms:

- *Band, channel or frequency band*—a designated range of radio wave frequencies used to communicate with a mobile device.
- *Bulk acoustic wave (BAW)*—an acoustic wave traveling through a material exhibiting elasticity.
- *Duplexer*—a bi-directional device that connects the antenna to the transmitter and receiver of a wireless device and simultaneously filters both the transmit signal and receive signal.
- *Carrier Aggregation (CA)*—the aggregation, or adding together, of multiple carriers (frequency bands) to meet the LTE-Advanced specification requirements, allowing for increased transmission bandwidth delivery of higher data rates, improved capacity and more efficient use of a carriers fragmented spectrum.
- *Filter*—a series of interconnected resonators designed to pass (or select) a desired radio frequency signal and block unwanted signals.

- *Resonator*—a device that naturally oscillates (or resonates) at specific frequencies. The oscillations in a resonator can be either electromagnetic or mechanical (including acoustic). Resonators are the building blocks for filters.
- *RF front-end (RFFE)*—the circuitry in a mobile device responsible for the analog signal processing which is located between the antenna and the digital baseband.
- *Surface acoustic wave (SAW)*—an acoustic wave traveling along the surface of a material exhibiting elasticity, with an amplitude that typically decays exponentially with depth into the substrate.
- *Temperature-Compensated SAW (TC-SAW)*—a SAW device which has additional material alterations to reduce its variation with changes in temperature.

The Mobile Internet

The need for duplexers and other filters in the RFFE of mobile devices is growing rapidly due to rising consumer demand for always-on wireless broadband. Mobile devices such as smartphones and tablets are quickly becoming the primary means of accessing the internet. According to Cisco, worldwide mobile data traffic grew 63% in 2016 and will grow at a compounded annual growth rate of 47% from 2016 to 2021. Cisco also predicted that the total number of smartphones will be nearly 50% of all global devices and connections by 2020.

The exponential growth in mobile data traffic is testing the limits of existing wireless bandwidth. Carriers and regulators have responded by opening new RF spectrum, driving up the number of frequency bands in mobile devices, and thus pushing mobile phone designers to make more efficient use of spectrum.

According to Yole Development, the market for RFFE filters in mobile devices was 40.3 billion filters in 2017 and will grow to an estimated 104.5 billion filters by 2020.

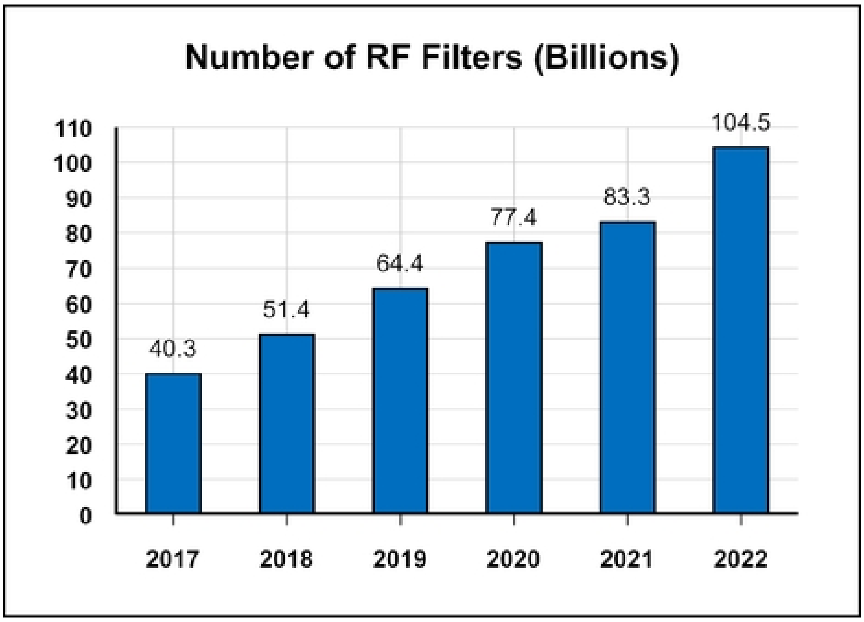

Figure 1—Projected growth of the market for RFFE filters including duplexers and quadplexers in mobile devices from 2017 through 2022 (in billions of filters). *Source: Yole Development.*

In addition to RFFE filter unit growth, filter sales growth is expected to follow and is estimated to be $7.2 billion in 2017 and is forecasted to reach $20.2 billion by 2022, according to Yole. By 2025 Yole estimates that filters will represent 70% of the RFFE component market.

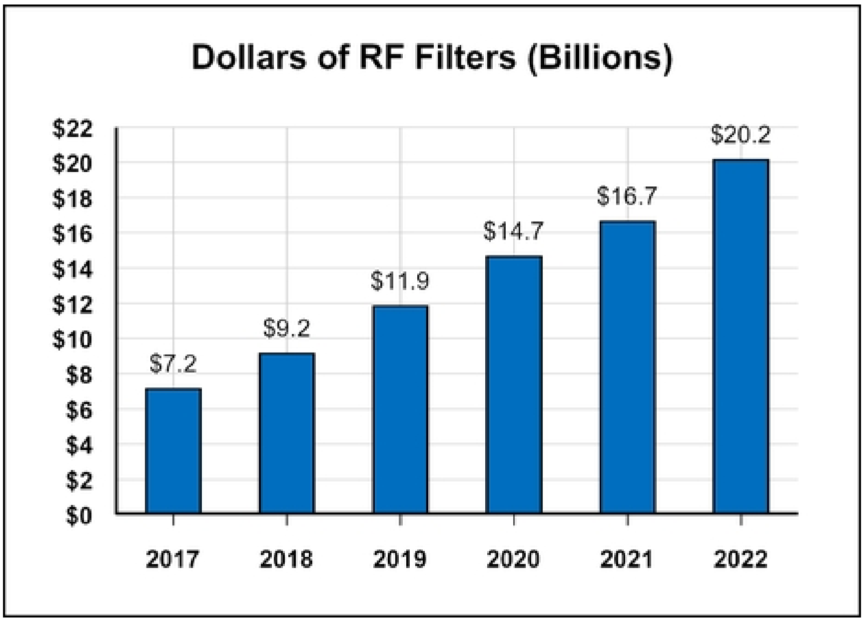

Figure 2—Projected growth of the market for RF front-end filters, including duplexers and quadplexers, in mobile devices from 2017 through 2022 (in billions of dollars). *Source: Yole Development.*

Adding RF spectrum to increase capacity and data-rate is not a complete solution. The added spectrum does not come in large contiguous blocks, but rather in small channels or bands of varying size and frequency. Thus, more data means more bands, and the result is a rapid and substantial increase in the number of bands in mobile devices.

Challenges Faced by the Mobile Device Industry

The world is progressing toward ubiquitous RF coverage in which almost all devices will be connected, most wirelessly. Technology experts predict that by 2021 there will be over 26 billion connected devices operating worldwide and we will be measuring mobile usage in Exabytes. This overwhelming demand for wireless data has driven the carriers and regulators to open new spectrum bands.

This substantial and rapid increase in bands has created several significant problems, including a corresponding increase in the number of filters and duplexers in mobile devices. Traditional RF front-end solutions typically require one duplexer for each frequency band. The most recent iPhones support coverage for 19 FDD-LTE and 5 TDD-LTE bands, in addition to support for previous wireless technology generations, 3G and 2G, with each band requiring a filter, either as an individual filter, a duplexer or a quadplexer, depending upon the spectrum and CA requirements. This increase in number and complexity of filters is dramatically driving up the cost of RF front-ends. In the latest global smartphones, filters and duplexers comprise more than half of the cost to the RF front-end, according to a Barclays' analysis.

The growing number of filters is also increasing the total size of the RF front-end. In some cases, size constraints require the OEM to fragment its product offering into multiple versions, each with a limited set of filters customized for a particular geographic region. Multiple versions of a mobile product increases manufacturing, inventory and distribution costs. In addition, consumers can find it difficult to roam between carriers and/or countries due to this splintering of bands and phone models. Phone OEMs would prefer to make one version of a product containing a full set of filters that can be electronically selected as required for a particular carrier network.

In addition, the new, higher frequency bands tend to use relatively expensive BAW technology. Phone OEMs would prefer to use SAW technology because of its lower cost and smaller size. However, conventional filter designs using SAW technology do not perform adequately in high frequency bands or in bands with closely spaced receive and transmit channels, typical of many new bands.

Adding to the complexity of the industry, mobile devices must now be capable of receiving from two, to as many as five, downlink bands simultaneously, known as downlink CA. This CA requirement creates the need for complex multiplexing filters, or multiplexers, which are significantly more complex than duplexers and effectively require four filters for each CA combination. There will be an estimated 200 worldwide combinations of CA cases, creating increased complexity and cost to RFFEs. In the case of a quadplexer, with four different frequency bands, within each band the signal loss must be minimized, while rejecting three bands often in close proximity. Duplexers must only reject a single band. Mobile Experts predicts that more than 28 billion RFFEs will be shipped supporting CA in 2022. This rising complexity in the industry is also exacerbating the constraints on design capacity and resources.

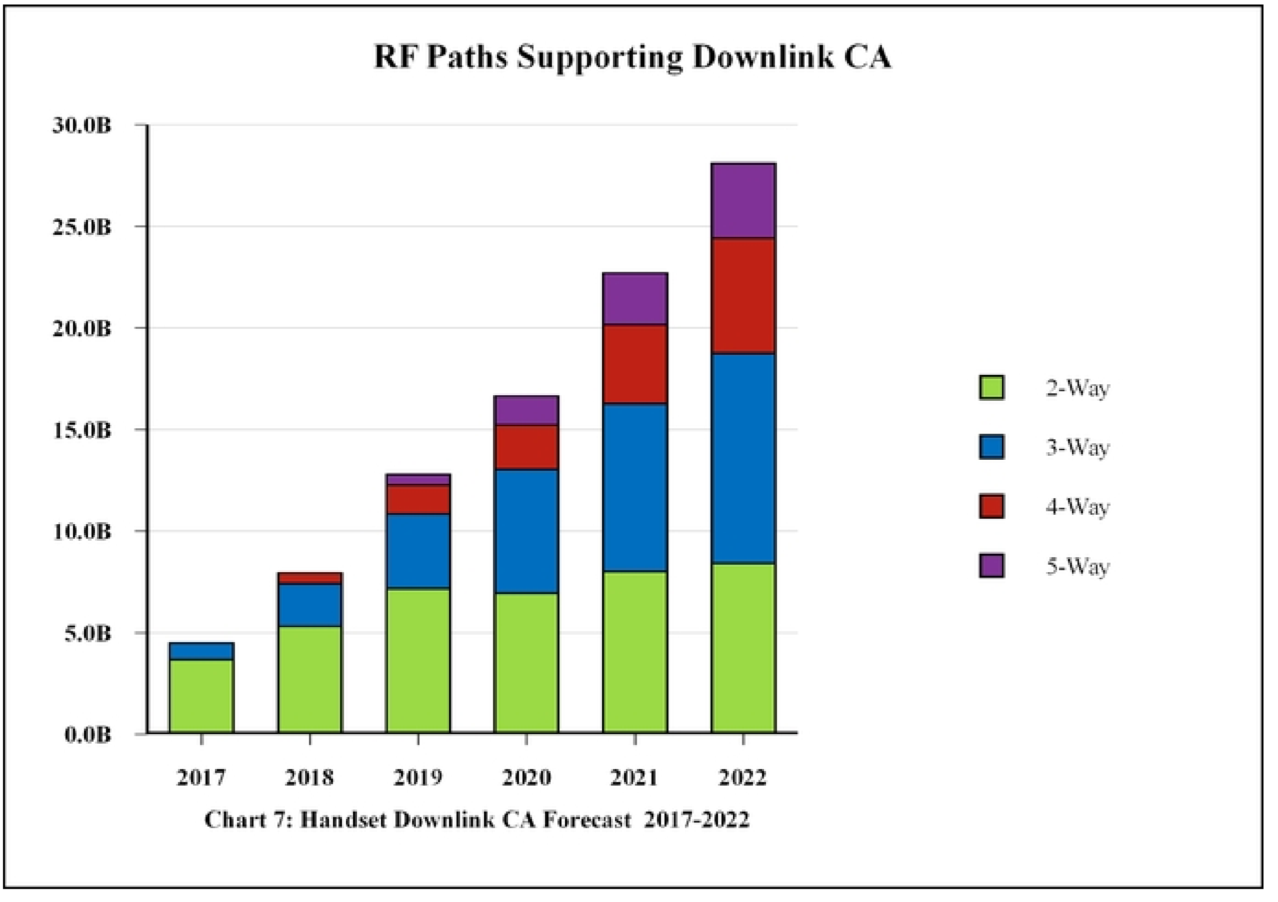

Figure 3-Projected growth of the market for mobile devices enabled for CA from 2017 through 2022 (in billions of units). *Source: Mobile Experts.*

In addition to the challenges described above, 5G will further exacerbate the problems of more demand for filters, filter designs, and more complexity and integration in the RFFE. 5G comprises three distinct segments:

- Enhanced mobile broadband: Extreme data-rates and capacity to support wireless video everywhere;
- Mission critical services: High reliability, low latency and high security for automotive, health and government; and
- Massive Internet of Things: Low cost, low energy, long life for wearables, smart home devices and interconnected devices

All three of these segments require filters and will further accelerate the already substantial growth in the filter market.

Our Technology

RFFE module companies currently produce filters internally or purchase filters from third-party manufacturers, such as Broadcom, Murata and RF360. These module companies and filter manufacturers design filters using their own internal resources, which we believe are proving insufficient to meet the explosive growth in both total global filter demand and unique filter designs, as well as the increasingly complex filter requirements necessitated in part by crowded spectrum and carrier aggregation. We believe that our patented ISN® technology will enable us to design complex filter products at approximately half the unit cost and in approximately half the time of traditional approaches. ISN® can be summarized as a three-step process:

We synthesize RF acoustic devices. We have developed a large suite of proprietary mathematical methods and software tools that allow us to find better solutions because we can explore a much larger set of possible solutions. Our ISN® tools and methods draw upon a century of network synthesis techniques. In other words, rather than rely on a single design solution (the acoustic wave ladder that is used almost solely in this industry to date), we generate, or synthesize, large numbers of unique solutions specifically for each set of requirements. This allows us to create filters using existing manufacturing methods, such as SAW manufacturing methods, that perform as well as those using the higher cost methods of BAWs. These synthesized solutions provide a framework for generating circuit models for optimization.

We use circuit models to optimize initial designs. Most of this industry models acoustic wave filters using a coupling-of-modes, or COM, model. In contrast, we use circuit models derived from the actual physics of acoustic wave filters. Circuit models are computationally much faster, which allows for very quick optimization of the many possible solutions that result from the synthesis process. We can quickly compare large numbers of different, optimized solutions before commencing the third step - lengthy but highly accurate simulations based on fundamental methods.

We use fundamental models to simulate final designs. Our highly accurate models are based entirely on fundamental material properties and dimensions, again unlike the common practice in this industry today. The precision and accuracy of our models allows for far fewer turns through the fab to reach the desired product performance. Because our models are fundamental, integration with our foundry and fab customers is eased due to the understanding of the basic material properties and dimensions of the fab.

Our Commercialization Plan

We will continue to pursue filter design projects with existing and potential customers and other strategic partners, and we believe licensing our designs is the most direct and effective means of delivering our solutions to the market and validating the technical advantages of our tools, IP and team. We intend to retain ownership of our technology, designs and related improvements and charge royalties based on sales of filters that incorporate our designs. We do not intend to manufacture or sell any physical products or operate as a contract design company developing designs for a fee. Our strategy is to establish and leverage alliances with customers, who will help grow the market for our designs by integrating them with their own proprietary technology and products, thus combining their own particular strengths with ours to provide an extensive array of solutions and to develop and license filter designs that offer improvements in the time to develop, cost, size and performance of RFFEs. The goal for our designs is to improve profit margins and increase market share for our customers.

Our customers are filter manufacturers, RFFE module manufacturers, RF active and passive component suppliers and potentially mobile handset OEMs. We license specific, custom designs to these customers. Our plan is to charge royalties at a fixed amount per filter or as a percentage of sales price. We expect to generate substantially all of our near-term revenues with these types of licensing arrangements. Each filter design and related royalty stream is expected to have a finite commercial life as mobile devices continue to evolve. Our plan is to offer our customers replacement designs as existing designs become obsolete.

We anticipate that once a development and license agreement is signed and design begins, there could be 12 to 36 months before the start of royalty payments under a particular license, depending on the complexity and scope of the engagement.

Our products will be designed for manufacture with existing high-volume fabrication processes allowing rapid time to market, but we do not plan to manufacture or sell any physical components. Unlike a manufacturing company, we intend to create designs for manufacturers, eliminating for us the costs and problems associated with manufacturing and inventory. This allows us to concentrate on our unique expertise, leaving the hardware manufacturers to drive their own economies of scale.

Single Band Designs

We continue to develop a series of SAW filter designs for RF frequency bands presently dominated by the larger and more expensive BAW filters. In 2017, we continued to develop single band, SAW filter designs for customers. Some of these filter designs are for duplexers that have historically been TC-SAWs or BAWs while others are for discrete SAW filters that may need improvements in performance, size or cost. The single band designs included WiFi Co-Existence filters, which pass licensed wireless frequencies, while protecting WiFi from interference, and designs for module applications which require wafer-level (WL) packaging and modeling of the module board. We believe that, using our ISN technology, combined with our experience and know-how, we can design innovative SAW filters that meet the performance requirements for many of these bands but at significantly less cost than that of BAW filters they would replace. These single band filter designs are the earliest opportunity for royalty revenues, and represented the nominal royalty revenues in 2017. In 2017, we also developed single band designs using TC-SAW processes in order to take advantage of the improved temperature stability.

Multiplexer Designs

Wireless carriers worldwide are experiencing increasing demand for higher data speeds. CA allows multiple data streams from different frequencies to be added together to provide increased data rate for the mobile users. However, CA further complicates the required filter characteristics. Quadplexers, (4-RF path multiplexer) as described above, enable CA on both receive and transmit paths and reduce the RFFE complexity by reducing the number of switches, but the complexity of the filters themselves increases dramatically. During 2017, we continued to expand the number of quadplexers under contract and the first quadplexer using our design was sampled to an OEM. We believe that our ISN® technology is ideally suited to these difficult filter design problems that covers a wide frequency range with much more demanding performance requirements.

Although some band combinations for aggregation will not require multiplexers, we believe that multiplexers are the best solution for bands in close frequency proximity. We are developing high performance multiplexer designs to address this growing market.

Advance Developments

We believe that our ISN® technology will also enable us to design novel filters that are more than simple replacements to existing slots, but rather can enable an architecture change, or can provide a step function improvement in performance, size and cost to a handset manufacturer. These include:

- *Triplexers/Multiplexers*- wideband, low loss multiplexed filters which allow efficient sharing of antennas. As more spectrum becomes available above 2.5GHz the focus will be in minimizing the losses at the higher frequency.

- *Multi-passband Filters* - small size, low loss filters to maximize printed circuit board space and minimize loss, particularly suited for CA applications. The absence of switching elements further reduces size and cost for CA.

Our immediate focus is to address the problems in the RFFE with innovative single-band and multiplex designs made possible with our ISN® technology. These designs present the greatest near-term potential for commercialization of our ISN® technology. We expect the trend towards spectrum proliferation, in addition to CA and MIMO, will require complex filter multiplexing. We believe our ISN® technology will enable cost effective designs for these applications.

We also believe that the power of Resonant ISN® tools and methodology will continue to enable fabless customers and filter foundries to newly enter or expand their participation in the supply chain for RF filters. In late 2016, we expanded our customer focus to include fabless filter manufacturers, which are companies that do not have their own internal filter fabrication facility. Typically these companies already are supplying other products in the RFFE to the OEMs, and as a result do not require a protracted, new vendor, qualification process in order to supply parts. In 2017, to further facilitate our fabless filter program and to provide manufacturing stability across the supply chain to our fully integrated filter customers, we created our ISN Foundry Program. Foundries joining the ISN Foundry Program first complete a foundry evaluation process to ensure alignment with our customers for filter performance, manufacturing quality and capacity, and business practices. Once the evaluation is completed, the foundry runs a characterization lot, used to create a foundry process design kit, after which we are ready to start designs for manufacture in the foundry. Packaging/Back-end vendors also can join the program by completing a back-end evaluation process to match their capabilities with foundry partners and our customers. It is through this program that we can enable a secure supply chain for all our customers.

Intellectual Property

We have an active program protecting our proprietary technology. We engage in a thorough process of intellectual property landscaping that provides an in-depth analysis of not only the markets we are addressing but also adjacent markets, so that we can tactically and strategically protect our position in the market through the filing of strategic patents. Our patent portfolio reflects both the initial technology contribution of STI, as well as our own patent filings since our founding. Through our landscaping and advanced product development processes we have plans to file additional patents in 2018.

Our patent portfolio comprises more than 125 issued and pending patents. This patent portfolio relates primarily to the following subject matter:

- Physical Implementation
- Design Synthesis and Optimization Speed
  - Network Synthesis
  - Image Design
  - Circuit Designs
- Simulation Accuracy
- Next Generation Designs/Architectures
  - Simplifying the RFFE
- Circuit Structure
- Critical Design Requirements
  - Power handling and linearity
  - Temperature dependence
  - Yield Analysis

We also have an active and ongoing program to identify, protect and commercialize our intellectual property. This program includes the development of a comprehensive patent strategy. We routinely use specialized outside firms to assist in these endeavors. These firms assist with invention identification, intellectual property strategy and competitive landscape analysis.

There can be no assurance that our pending patent applications or any future patent applications will be approved or will not be challenged successfully by third parties, that any issued patents will protect our technology or will not be challenged by third parties, or that the patents of others will not have an adverse effect on our ability to do business. Furthermore, there can be no assurance that others will not independently develop similar or competing technology or design around any patents that have been or may be issued to us.

We also rely on trademark, mask works, copyright and trade secret laws to protect our intellectual property. We have registered U.S. trademarks for ‘‘Resonant,’’ ‘‘ISN” and “Infinite Synthesized Networks.’’ We protect our trade secrets and other proprietary information by requiring confidentiality agreements from all our employees, consultants and third parties having access to such information. Despite these efforts, there can be no assurance that others will not gain access to our trade secrets, or that we can meaningfully protect our technology. In addition, effective trademark, copyright and trade secret protection may be unavailable or limited in certain foreign countries. Although we intend to protect our rights vigorously, there can be no assurance that such measures will be successful.

Competition

To our knowledge, we have no direct competitors in the electronic design automation or licensing business that are exclusively focused on RFFEs. We have spent many years developing ISN®, and our own patented suite of design tools created specifically for this purpose. No comparable acoustic wave filter design tool exists in the market today to our knowledge. In combination with our experienced design team, we believe we offer our customers a novel solution to the need for increasingly complex filter designs developed by an independent, stand-alone company that is not presently offered by any other company.

We have advantages that we believe present significant barriers to entry for potential competitors that desire to replicate our business model:

- a large and growing portfolio of patents;
- a suite of proprietary software design tools;
- a growing number of customers;
- a highly experienced design team; and
- a multi-year technology lead.

We do compete with the existing filter designs and design capabilities of the design teams at our customers and target customers and their filter manufacturers. We must demonstrate to our customers, target customers and their filter manufacturers, that switching to our designs will give them a competitive advantage by providing market entry or sufficiently improving the cost, size, and performance of their current products to justify our royalty rates.

The use of our patented ISN tools, not only enables lower cost and smaller size SAW solutions for single band and multiplexer designs but also enables development of creative filter solutions for next generation RFFE architectures that, if successful will offer new, highly competitive solutions to many of the challenges facing the manufacturers of RFFE modules.

Employees

We currently have 53 employees, 40 of which are on our technical staff and 13 of which are devoted to finance, sales, marketing and administrative matters. We also use several outside consultants.

Our principal executive offices are located at 110 Castilian Drive, Suite 100, Goleta, California 93117, and our telephone number is 805-308-9803. We also have development offices in Burlingame, California and Neuchatel, Switzerland and an office in Seoul, South Korea. Our website address is www.resonant.com. The information contained on, or that can be accessed through, our website is not a part of this report.

ITEM 1A. RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Form 10-K, including our consolidated financial statements and related notes, before investing in our common stock. If any of the following risks materialize, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the price of our common stock could decline, and you could lose part or all of your investment.

Risks Related to Our Business and Our Industry

We may require additional capital to continue operations in the future, which capital may not be available on terms acceptable to us, if at all.

Our consolidated financial statements account for the continuation of our business as a going concern. We are subject to the risks and uncertainties associated with a new business. Our principal source of liquidity as of December 31, 2017 consists of existing cash and cash equivalents of $19.5 million. During the year ended December 31, 2017, we used $15.6 million of cash and investments for operating activities, the purchase of property and equipment, and expenditures for patents. Due to these conditions, along with planned growth, substantial doubt exists as to our ability to continue as a going concern. After evaluation of these conditions, we believe our current resources will provide sufficient funding for planned operations into the second half of 2018. If necessary, we will seek to raise additional capital from the sale of equity securities or the incurrence of indebtedness to allow us to continue operations. There can be no assurance that additional financing will be available to us on acceptable terms, or at all. Additionally, if we issue additional equity securities to raise funds, whether to existing investors or others, the ownership percentage of our existing stockholders would be reduced. New investors may demand rights, preferences or privileges senior to those of existing holders of common stock. Additionally, we may be limited as to the amount of funds we can raise pursuant to SEC rules and the continued listing requirements of NASDAQ. If we cannot raise needed funds, we might be forced to make substantial reductions in our operating expenses, which could adversely affect our ability to implement our business plan and ultimately our viability as a company. These consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classification of liabilities that might result from this uncertainty.

We have a history of operating losses and we may never achieve or maintain profitability or positive cash flows.

We have a limited operating history and utilize planned milestones for investors to evaluate our progress. We have generated minimal revenues and we have a history of losses from operations with an accumulated deficit as of December 31, 2017 of $67.8 million. Our operations have been funded with initial capital contributions, proceeds from the sale of equity securities and debt. We intend to continue to make investments to support our business growth and may require additional funds to respond to business challenges, including the need to refine existing technology, develop new technology, improve our operating infrastructure or acquire complementary businesses and technologies. Our ability to generate revenues and achieve profitability and, ultimately, positive cash flows, may depend on whether we can obtain additional capital when we need it and will depend on whether we continue to refine our technology and find additional customers who will license our designs. There can be no assurance that we will ever generate adequate revenues to achieve profitability and positive cash flows.

Our business model is based on licensing filter designs, which is unproven. Historically, our target customers have relied on their own filter designs or purchased finished filters from a manufacturer, and have not licensed third-party designs. Consequently, we may not succeed in our licensing strategy, which would require us to adopt a new business model and would have a material adverse effect on our potential for generating revenues and potentially threaten our viability.

Our business model is based on licensing our proprietary filter designs. We do not intend to manufacture or sell any physical products or operate as a contract design company developing designs for a fee. We believe licensing our designs is the most direct and effective means of delivering our solutions to the market. We intend to retain ownership of our designs and charge royalties based on sales of filters and RFFE modules that incorporate our designs.

Our target customers either make part or all of the RFFE. These customers have historically used their own filter designs or purchased finished filters from a manufacturer. Our business model is new to the filter industry, and although we have encountered some resistance to our licensing strategy, initial royalty payments have been received. The failure to scale our business model would have a material adverse effect on our potential for generating revenues and potentially threaten our viability.

We may not be able to complete some of our designs because they do not meet our customers' expectations. Even if we succeed in developing a design that meets all of a customer's requirements, the customer could decline to use our design in their products. Further, our customer's product could fail in the marketplace. Any of these events would have a material adverse effect on our business and potentially threaten our viability.

We are currently working on filter designs for customers that have given us stringent performance specifications. In addition, some of our customers have shipped pre-production sample filter quantities of our designs to their customers for further evaluation. In the case of a few of our early designs, mass production has commenced. However, the filter qualification process is demanding and some designs will not result in volume production. If successfully developed and selected by our customer, our designs will compete against other technologies for inclusion in our customers' products. Our customers' final products will then compete against other products and technologies for inclusion in mobile devices in the marketplace. There can be no assurance that we can complete our designs, that our final designs will have acceptable performance and meet our customers' specifications, or if our pre-production sample filter shipments will be selected for production. Even if our filter designs have acceptable performance, there are a number of other considerations influencing the customer's decision whether to use our design, such as packaging type and manufacturing cost, many of which are beyond our control. The decision to use our designs is solely within our customers' discretion. Further, if our filter design is selected by a customer for inclusion in its design or product, there is no guarantee that the customer's design or product will be selected for inclusion in mobile devices. The failure of a significant number of our designs to be selected at the design stage or the device stage would have a material adverse effect on our business and potentially threaten our viability.

We are not a filter manufacturer, and thus we are reliant on filter fabricators or manufacturers to manufacture filters from our designs. For some of our customers that will not manufacture our design themselves, we may be required to have our customer approve the filter manufacturer, and the customer will not license our design unless the manufacturer can demonstrate the ability to economically produce the duplexer design in large volumes.

Even though some of our designs have reached commercialization on a small scale, and we believe our future completed designs can be manufactured using existing technology, we remain dependent on the manufacturer's filter fabrication processes and capabilities for our filter designs. Even with a fully compliant duplexer design, the customer may not license our design unless the manufacturer can demonstrate the ability to economically produce the design in large volumes. We do not have any control over the manufacturer. We cannot assure you that the manufacturer will have the necessary technology, skills and resources to successfully manufacture of our design in commercial quantities.

Our designs will be complex and may prove difficult to manufacture in commercial quantities. We will be relying on our customers and filter fabricators or manufacturers to build our designs. Our business could fail if they encounter difficulties manufacturing our designs in commercial quantities.

We continue to develop complex RF designs, which is inherently challenging. Only a few of our designs are currently in production. We rely on our customers and filter fabricators or manufacturers to manufacture our designs. They will need to manufacture our designs in commercial quantities at an acceptable cost, and have little or no control over the manufacturing process. They must also operate and maintain sophisticated manufacturing equipment, and equipment failures can have adverse consequences on production volumes, yields and schedules. They may encounter difficulties in scaling up production of our designs, including problems with quality control, raw material and component supply shortages, low manufacturing yields, increased costs, shortages of qualified personnel and/or difficulties associated with compliance with regulatory requirements. Any of these problems may adversely affect the timing and amount of our future revenues. Additionally, if our customers and their suppliers encounter difficulties manufacturing our designs in commercial quantities, our business could fail.

Our business success relies on manufacturers to fabricate our designs, and market acceptance of our designs could be adversely affected if the manufacturers decline to manufacture our designs.

We are a filter design company and will not commercially manufacture any products. Our business model is to license our designs to customers, who will manufacture our designs themselves or rely on third party manufacturers, commonly referred to as foundries, to fabricate our designs for integration into the customer's overall product. Many foundries offer potentially competitive filter technology as part of their standard product line or offer the services of in-house design teams which may consider us competition. In this case, our customers may face resistance by their foundries to manufacture our designs. We believe the economics can be structured to make it attractive to the foundries to manufacture our designs for our potential customers but we cannot be assured of the success in convincing them of the value of manufacturing our designs. The reluctance of foundries to manufacture our designs could adversely affect the market acceptance of our designs.

We develop and test our designs under laboratory conditions using low volume production samples. Once in production, our designs may not perform as well, or prove unreliable, due to manufacturing variations and operating conditions. This could adversely affect our business.

We develop and test our designs under laboratory conditions using low volume production samples. The transition from product development to commercial production requires high volume manufacturing which introduces product variations. These variations can adversely affect performance and reliability. Similarly, our designs may not perform as well or prove sufficiently reliable under actual operating conditions. This could adversely affect our business.

We perform failure analysis and reliability testing of our customers' parts that use our designs. If our analysis and testing prove to be faulty and our customers rely upon such information, our reputation could be damaged and our future business and revenues could be adversely affected.

We perform failure analysis and reliability testing of our customers' parts. In the event our analysis and testing prove to be faulty or insufficient, including due to failure of our laboratory equipment or human error, and our customers rely upon the results we provide, our reputation may be damaged, and customers may be reluctant to utilize our services or license our designs. This could harm our ability to attract customers and negatively impact our financial results, and may result in claims against us by our customers or others.

We have completed and continue to actively work on filter designs with, and expect to derive all of our revenues from, a small number of customers. Our failure to retain or expand customer relationships will have an adverse effect on our revenues.

We have completed and are currently working on filter designs with, and expect to derive our revenues from, a small number of customers. Our failure to retain or expand customer relationships, or any problems we experience in collecting receivables from them, would harm our financial condition and results of operations. Additionally, our industry is experiencing consolidation among suppliers and manufacturers of RF front-end components and modules, including activities of module suppliers who vertically integrate by acquiring component suppliers and fabs. This may lead to fewer customers, reduced demand for our designs and replacement of our designed products by the consolidated company. Any of these possibilities could adversely affect our business, financial condition and results of operations.

We are a solutions company, providing designs based on our ISN® software platform, intellectual property and design team. We license our designs to manufacturers of RFFEs, RFFE sub-systems and components for mobile devices. If our designs do not achieve widespread market acceptance among RFFE manufacturers, we will not be able to generate the revenue necessary to support our business.

Achieving additional acceptance among RFFE manufacturers of our designs will be crucial to our continued success. We have a limited history of marketing designs and we may fail to generate significant interest in our designs. These and other factors may affect the rate and level of market acceptance, including:

- our royalty fees and the cost of our designed filters relative to other competing designs and technologies;
- perception by RF front-end manufacturers and mobile device manufacturers;
- press and blog coverage, social media coverage, and other publicity and public relations factors which are not within our control; and
- regulatory developments related to manufacturing, marketing and selling our designs.

If we are unable to achieve or maintain market acceptance, our business would be harmed.

The complexity of our designs could result in unforeseen delays or expenses from latent defects that could reduce the market acceptance for our designs, damage our reputation and adversely affect our future revenues and operating costs.

We are developing highly complex filters designs using a new approach. We have produced only a limited number of designs that have gone into commercial production and therefore cannot be certain our methods and testing procedures are adequate to detect latent design defects. If any of our designs contain latent defects, we may be unable to correct these problems. Consequently, our reputation may be damaged and customers may be reluctant to buy our designs, which could harm our ability to attract customers and negatively impact our financial results. These problems may also result in claims against us by our customers or others.

Failures in the products or services of our customers, including those resulting from defects or errors, could result in decreased sales and harm our business.

Our success depends in large part on the demand for mobile wireless devices and other products that incorporate our proprietary filter designs. Our customers' products are inherently complex and may contain defects or errors unrelated to our designs that are detected only when the products are in use. Any defects or errors in the products of our customers could result in product recalls or the discontinuation of those products, which could have an adverse impact on our operating results due to a delay or decrease in demand for our designs. Further, security failures, defects or errors in mobile wireless devices, such as the issues with the Galaxy Note 7 that caused Samsung to discontinue that product, have led to increased scrutiny of component suppliers. If our customers do not perceive our designs, or if mobile device manufacturers do not perceive the products of our customers, to be of high quality, or if we or our customers are unable or unwilling to comply with heightened quality assurance requirements of mobile device manufacturers, we may be unsuccessful in having our designs incorporated into finished products.

Our designs may not gain widespread acceptance unless they offer greater benefits to our customers than offered by competing RF filter designs.

RF front-end manufacturers are primarily concerned with the cost, size and performance of RF filters. Our designs may not gain widespread acceptance unless, as compared to competing RF filter designs, they are smaller in size, can be fabricated at reduced cost or designed in less time, or improve performance. There can be no assurance that our SAW or TC-SAW filter designs will cost sufficiently less to manufacture than existing BAW filters, or can be designed in less time, to prove economically attractive to RF front-end manufacturers or that our filter designs will be smaller in size or perform better.

Our technologies have only limited verification in practice or on a commercial scale.

Our technologies have been subject to only limited testing on a commercial scale. There is no assurance that we will be able to fully develop designs that will transition into production or license our proposed designs on a timely basis, or at all.

Our development cycles are long and our final designs may no longer remain competitive upon completion.

We operate in an industry which is subject to rapidly evolving technologies. Because our designs are expected to have long development cycles, we must anticipate changes in the marketplace and the direction of technological innovation and customer demands. To compete successfully, we will need to demonstrate the advantages of our designs and technologies.

Our industry is subject to intense competition and rapid technological change, which may result in designs, products or new solutions that are superior to our designs under development. If we are unable to anticipate or keep pace with changes in the marketplace and the direction of technological innovation and customer demands, our designs may become less useful or obsolete and our operating results will suffer.

We operate in an industry which is subject to intense and increasing competition. Our future success will depend in large part on our ability to establish and maintain a competitive position in current and future technologies. Rapid technological development may render our designs and technologies obsolete. Many of our competitors have or may have greater engineering, sales, marketing, operational, corporate and financial resources, and more experience in research and development than we have. We cannot assure you that our competitors will not succeed in developing or marketing technologies or products that are more effective or commercially attractive than our designs or that would render our technologies and designs obsolete. We may not have or be able to raise or develop the financial resources, technical expertise, or support capabilities to compete successfully in the future. Our success will depend in large part on our ability to maintain a competitive position with our technologies.

If our principal end markets fail to grow or experience declines, our net revenue may not meet our business plan expectations.

Our initial designs are being incorporated into mobile wireless devices. Accordingly, demand for our designs is dependent on the ability of mobile wireless device manufacturers to successfully sell wireless devices that incorporate our designs. We cannot be certain whether these manufacturers will be able to create or sustain demand for their wireless devices that contain our designs or how long they will remain competitive in their business, if at all. The success of these mobile wireless device manufacturers and the demand for their wireless devices can be affected by a number of factors, including, but not limited to:

- market acceptance of their mobile wireless devices that contain our designs;
- the impact of slowdowns or declines in sales of mobile wireless devices in general;
- their ability to design products with features that meet the evolving tastes and preferences of consumers;

- fluctuations in foreign currency;
- relationships with wireless carriers in particular markets;
- the implementation of, or changes to, mobile wireless device certification standards and programs;
- technological advancements in the functionality and capabilities of mobile wireless devices;
- the imposition of restrictions, tariffs, duties, or regulations by foreign governments on mobile wireless device manufacturers;
- failure to comply with governmental restrictions or regulations;
- cost and availability of components for their products; and
- inventory levels in the sales channels into which mobile wireless device manufacturers sell their products.

Our intellectual property rights may not be adequate to protect our business

Our success depends significantly on our ability to obtain, maintain and protect our proprietary rights to the technologies used in products incorporating our technologies. We currently hold patents related to various elements of our technology and we also have patent applications currently pending before the United States Patent Office and other patent offices around the world. No assurances can be given that any patent will be issued on our pending patent applications or any other application that we may file in the future or that, if such patents are issued, they will be sufficiently broad to adequately protect our technology. In addition, we cannot assure you that any patents that may be issued to us will not be challenged, invalidated, or circumvented.

Our proprietary rights may be difficult to enforce, which could enable others to copy or use aspects of our intellectual property without compensating us, thereby eroding our competitive advantages and harming our business.

Our success depends, in part, on our ability to protect proprietary methods and technologies that we develop under the intellectual property laws of the United States, so that we can prevent others from using our inventions and proprietary information. If we fail to protect our intellectual property rights adequately, our competitors might gain access to our technology, and our business might be adversely affected. We rely on trademark, copyright, mask works, trade secret and patent laws, confidentiality procedures and contractual provisions to protect our proprietary methods and technologies. We currently hold patents and have pending patent applications related to our technology solutions. Valid patents may not be issued from our pending applications, and the claims allowed on any issued patents may not be sufficiently broad to protect our technology or offerings and services. Any patents we currently hold or that may be issued to us in the future may be challenged, invalidated or circumvented, and any rights granted under these patents may not actually provide us with adequate defensive protection or competitive advantages. Additionally, the process of obtaining patent protection is expensive and time-consuming, and we may not be able to prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner.

Policing unauthorized use of our technology is difficult. Additional uncertainty may result from changes to intellectual property legislation enacted in the United States, including the recent America Invents Act, and other countries and from interpretations of the intellectual property laws of the United States and other countries by applicable courts and agencies. In addition, the laws of some foreign countries may not be as protective of intellectual property rights as those of the United States, and mechanisms for enforcement of our proprietary rights in such countries may be inadequate. From time to time, legal action by us may be necessary to enforce our intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement. Such litigation could result in substantial costs and the diversion of limited resources and could negatively affect our business, operating results and financial condition. If we are unable to protect our proprietary rights (including aspects of our technology platform) we may find ourselves at a competitive disadvantage to others who have not incurred the same level of expense, time and effort to create and protect their intellectual property.

Furthermore, we acquired some of the patents we currently hold from Superconductor Technologies, Inc., or STI. Although we believe we have obtained valid assignments of patent rights from STI and STI has obtained valid assignments of patent rights from all inventors, if an inventor did not adequately assign his or her patent right to STI or STI did not adequately assign its patent rights to us, a third party could obtain a license to the patent from such inventor or STI. This could preclude us from enforcing the patent against such third party. In addition, because we acquired our patents from STI, some of the inventors of our patents are not our employees and they are not obligated to assist us in prosecuting, maintaining, defending and enforcing such patents. Without the cooperation of the inventors of our patents, it may be difficult for us to prevail in any legal action involving the intellectual property rights under our patents. Additionally, the inventors may have information, trade secrets and know-how learned while at STI that is not our property and if disclosed could provide competitors with insights that allow them to invent around our patented technology.

Accordingly, despite our efforts, we may be unable to obtain adequate patent protection, or to prevent third parties from infringing upon, misappropriating or inventing around our intellectual property.

We may be subject to intellectual property rights claims by third parties, which are extremely costly to defend, could require us to pay significant damages and could limit our ability to use certain technologies.

Third parties may assert claims of infringement of intellectual property rights in proprietary technology against us for which we may be liable or have an indemnification obligation. Any claim of infringement by a third party, even those without merit, could cause us to incur substantial costs defending against the claim and could distract our management from our business.

Although third parties may offer a license to their technology, the terms of any offered license may not be acceptable and the failure to obtain a license or the costs associated with any license could cause our business, results of operations or financial condition to be materially and adversely affected. In addition, some licenses may be non-exclusive, and therefore our competitors may have access to the same technology licensed to us. Alternatively, we may be required to develop non-infringing technology, which could require significant effort and expense and ultimately may not be successful. Furthermore, a successful claimant could secure a judgment or we may agree to a settlement that prevents us from licensing certain designs or performing certain services or that requires us to pay substantial damages, including treble damages if we are found to have willfully infringed the claimant's patents or copyrights, royalties or other fees. Any of these events could seriously harm our business, operating results and financial condition.

We may be unsuccessful in monetizing our intellectual property portfolio.

We have dedicated substantial resources to the development and protection of technology innovations essential to our business, and we expect these activities to continue for the foreseeable future. We also intend to aggressively pursue monetization avenues for our intellectual property portfolio, potentially including licensing, royalty or other revenue-producing arrangements. However, our revenues are currently generated in part by licensing our technology and we may never be successful in generating a revenue stream from our intellectual property, in which case our investments of time, capital and other resources into our intellectual property portfolio may not provide adequate, or any, returns.

Our customer agreements include indemnity provisions and may expose us to substantial liability for intellectual property infringement and other losses.

Our customer agreements include indemnification provisions under which we agree to indemnify third parties for losses suffered or incurred as a result of claims of intellectual property infringement, damages caused by us to property or persons, or other liabilities relating to or arising from our designs, services, or other contractual obligations. The term of these indemnity provisions generally survives termination or expiration of the applicable agreement. Large indemnity payments could harm our business, operating results and financial condition.

We use highly specialized proprietary software as well as commercially available software pursuant to annual licenses, and the failure of this software or inability to renew any of these licenses could adversely affect our ability to design new RF filters and thus our potential for generating revenues.

We have developed and use highly specialized proprietary computer software in our design process. The failure of any of this software to perform as expected could adversely affect our ability to produce new RF filter designs and thus our potential for generating revenues. In addition to our proprietary software, we also use highly specialized but commercially available computer software in our design process. We do not own this software and use it under the terms of licenses. These licenses are made available to us at prices and on terms generally available to any customer. If we were unable to renew any of these software licenses, we would have to locate or develop alternative software. We cannot assure you that suitable alternative software would be available on commercially reasonable terms or could be developed by us at reasonable cost. The loss of any one of these software licenses could adversely affect our ability to produce new RF filter designs and thus our potential for generating revenues.

Our limited operating history makes it difficult to evaluate our business and prospects and may increase the risks associated with your investment.

We have only a limited operating history upon which our business and future prospects may be evaluated. We have encountered and will continue to encounter risks and difficulties frequently experienced by companies in rapidly developing and changing industries, including challenges related to recruiting, integrating and retaining qualified employees; making effective use of our limited resources; achieving market acceptance of our existing and future solutions; competing against companies with greater financial and technical resources; and developing new solutions. Our current operational infrastructure may require changes for us to scale our business efficiently with additional technical personnel and effectively to keep pace with demand for our solutions, and achieve long-term profitability. If we fail to implement these changes on a timely basis or are unable to implement them effectively, our business may suffer. We cannot assure you that we will be successful in addressing these and other challenges we may face in the future. As a company in a rapidly evolving industry, our business prospects depend in large part on our ability to:

- build a reputation for a superior solution and create trust and long-term relationships with our customers;
- distinguish ourselves from competitors in our industry;
- develop and offer competitive technologies that meet our customers' needs as they change;
- respond to evolving industry standards and government regulations that impact our business;
- expand our business internationally; and
- attract, hire, integrate and retain qualified and motivated employees.

If we are unable to meet one or more of these objectives or otherwise adequately address the risks and difficulties that we face, our business may suffer, our revenue may decline and we may not be able to achieve growth or long-term profitability.

Our management team and financial reporting group is limited in size and experience which may impact the implementation and administration of financial and reporting controls and procedures.

Although our management team makes certain representations about the financial and reporting controls and procedures in our SEC filings, our management team has limited experience in implementing and maintaining our operations and our financial processes. Financial and reporting controls and procedures implemented and maintained by our management team, now or in the future, may not be adequate, with the result that there may be substantial deficiencies that will need remediation in the future. If there are inadequate controls and procedures, our financial statements and our reporting may be inaccurate or untimely.

The loss of the services of our key management and personnel or the failure to attract additional key personnel could adversely affect our ability to operate our business.

A loss of one or more of our current officers or key employees could severely and negatively impact our operations. We have no present intention of obtaining key-man life insurance on any of our executive officers or management. Additionally, competition for highly skilled technical, managerial and other personnel is intense. As our business develops, we might not be able to attract, hire, train, retain and motivate the highly skilled managers and employees we need to be successful. If we fail to attract and retain the necessary technical and managerial personnel, our business may not grow, may suffer and might fail.

We may have difficulty managing growth in our business.

Because of our small size, growth in accordance with our business plan, if achieved, will place a significant strain on our financial, technical, operational and management resources. As we expand our activities, there will be additional demands on these resources. The failure to continue to upgrade our technical, administrative, operating and financial control systems or the occurrence of unexpected expansion difficulties, including issues relating to our research and development activities and retention of experienced scientists, managers and engineers, could have a material adverse effect on our business, financial condition and results of operations and our ability to timely execute our business plan. If we are unable to implement these actions in a timely manner, our results may be adversely affected.

We plan to relocate our corporate headquarters and design servers, which could adversely affect our operations, operating results and financial condition, and may cause us to experience disruptions to our business.

In 2018, we plan to relocate our corporate headquarters in order to keep pace with our growth. In addition, we plan to relocate our design servers to a new dedicated third-party facility with improved security and utilities. The planned relocation may require significant management time and effort which would otherwise be devoted to focusing on ongoing business operations and other initiatives and opportunities. Moving facilities could negatively impact our ability to meet design schedules, and the expected benefits of the relocation may not be fully realized due to associated disruption to our operations and personnel. Any such delays or disruptions could have an adverse effect on our business, results of operations or financial condition.

Our worldwide operations are subject to political, legal and economic risks and natural disasters, which could have a material adverse effect on us.

Our customers are located around the world, including in the United States and Asia, and we expect that international sales will comprise a significant portion of total sales in the future. In addition, products utilizing our designs will be produced, assembled and tested at third-party manufacturing facilities located primarily in Asia. Consequently, we are subject to political, legal and economic risks associated with operations in foreign countries, including, without limitation:

- expropriation;
- changes in a specific country's or region's political or economic conditions;
- changes in tax laws, trade protection measures and import or export licensing requirements;
- difficulties in protecting our intellectual property;
- difficulties in managing staffing and exposure to different employment practices and labor laws;
- changes in foreign currency exchange rates;
- restrictions on transfers of funds and other assets of our subsidiaries between jurisdictions;
- changes in freight and interest rates;
- disruption in air transportation between the United States and overseas facilities;
- loss or modification of exemptions for taxes and tariffs; and
- compliance with U.S. laws and regulations related to international operations, including export control and economic sanctions laws and regulations and the Foreign Corrupt Practices Act.

In addition, our worldwide operations (or those of our business partners) could be subject to natural disasters such as earthquakes, tsunamis, flooding, typhoons and volcanic eruptions that disrupt manufacturing or other operations. For example, our Goleta and Burlingame operations are located near major earthquake fault lines in California. Any conflict or uncertainty in the countries in which we operate, including public health issues, safety issues, natural disasters, disruptions of service from utilities, nuclear power plant accidents or general economic or political factors, could have a material adverse effect on our business. Any of the above risks, should they occur, could result in an increase in the cost of components, production delays, general business interruptions, delays from difficulties in obtaining export licenses for certain technology, tariffs and other barriers and restrictions, longer payment cycles, increased taxes, restrictions on the repatriation of funds and the burdens of complying with a variety of foreign laws, any of which could ultimately have a material adverse effect on our business.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results could fall below the expectations of securities analysts and investors, resulting in a decline in our stock price.

The preparation of financial statements in conformity with generally accepted accounting principles, or GAAP, requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, as provided in *Item 7--Management's Discussion and Analysis of Financial Condition and Results of Operations*, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. Our operating results may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our operating results to fall below the expectations of securities analysts and investors, resulting in a decline in our stock price. Significant assumptions and estimates used in preparing our consolidated financial statements include those related to the fair values of equity instruments, other financial instruments and income taxes.

Our ability to use our net operating loss carryforwards ("NOLs") and other tax attributes to offset future taxable income may be limited.

We have significant NOLs and R&D tax credits available to offset our future United States federal and state taxable income. Under Sections 382 and 383 of Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change NOLs and other pre-change tax attributes, such as R&D tax credits, to offset its post-change income and taxes may be limited. In general, an "ownership change" occurs if there is a cumulative change in our ownership by "5% shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. If we experience ownership changes as a result of future transactions in our stock, then we may be further limited in our ability to use our NOLs and other tax assets to reduce taxes owed on the net taxable income that we earn. Any such limitations on the ability to use our NOLs and other tax assets could adversely impact our business, financial condition and operating results. In addition, California and certain states have suspended use of NOLs for certain taxable years and other states are considering similar measures. As a result, we may incur higher state income tax expense in the future. Depending on our future tax position, continued suspension of our ability to use NOLs in states in which we are subject to income tax could have an adverse impact on our operating results and financial condition.

Changes in U.S. tax laws and regulations, including the Tax Cuts and Jobs Act of 2017, may have a material adverse effect our business, cash flow, operating results, and financial condition.

Changes in tax laws and regulations, or changes in the interpretation of tax laws and regulations by federal or state authorities, may have a material adverse effect our business, cash flows, operating results or financial condition. The federal government recently enacted the Tax Cuts and Jobs Act of 2017, which contains many significant changes to federal income tax laws, including a reduction to the U.S. Corporate income tax rate. The reduction in the tax rate impacted our deferred tax assets by $6.8 million, which would have been recognized as tax expense if we did not have a full valuation allowance recorded against our deferred tax assets. Changes in corporate tax rates and the deductibility of expenses contained in the 2017 Tax Act or other tax reform legislation could have a material impact on the future value of our deferred tax assets, could result in significant one-time costs or expenses in the current or future taxable years, and could increase our future U.S. tax expense. In addition, foreign governments or U.S. states may enact tax laws in response to the 2017 Tax Act that could result in further changes to taxation applicable to us and materially affect our operating results and financial condition.

Security breaches and improper access to or disclosure of our proprietary information, or other hacking attacks on our systems, could adversely affect our business.

Our industry is prone to cyber-attacks, with third parties seeking unauthorized access to our proprietary information and technology. Computer malware, viruses, and hacking and phishing attacks by third parties have become more prevalent in our industry and may occur on our systems in the future. We believe such attempts are increasing in number and in technical sophistication, and in some instances we may be unable to anticipate these techniques or to implement adequate preventative measures. Additionally, we may be unaware of an incident or its magnitude and effects. Although we have developed systems and processes that are designed to protect our proprietary information and to prevent other cybersecurity breaches, we cannot guarantee that such measures will provide absolute security.

Any failure to prevent or mitigate security breaches and improper access to or disclosure of our proprietary information could result in the loss or misuse of such proprietary information, which could harm our business and diminish our competitive position. Such attacks may also create system disruptions or cause shutdowns. Publicity about vulnerabilities and attempted or successful incursions could damage our reputation with customers and reduce demand for our products and services.

Affected private parties or government authorities could initiate legal or regulatory actions against us in connection with any security breaches, which could cause us to incur significant expense and liability or result in orders or consent decrees forcing us to modify our business practices. Any of these events could have a material and adverse effect on our business, reputation, and operating results.

If we choose to acquire new businesses, products or technologies, we may experience difficulty in the identification or integration of any such acquisition, and our business may suffer.

Our commercial success depends on our ability to continually enhance and broaden our product offerings in response to changing customer demands, competitive pressures and technologies. Accordingly, we may in the future pursue the acquisition of complementary businesses, products or technologies instead of developing them ourselves. We do not know if we will be able to identify or complete any future acquisitions, or whether we will be able to successfully integrate any acquired business, product or technology or retain key employees. Integrating any business, product or technology we acquire could be expensive and time consuming, disrupt our ongoing business and distract our management. Moreover, we may fail to realize the anticipated benefits of any acquisition. If we are unable to integrate any acquired businesses, products or technologies effectively, our business will suffer. In addition, any amortization or charges resulting from acquisitions could adversely affect our operating results.

Risks Relating to the Securities Markets and Ownership of Our Common Stock

Our business could be negatively affected as a result of actions of activist stockholders, and such activism could impact the trading value of our securities.

Stockholders may, from time to time, engage in proxy solicitations or advance stockholder proposals, or otherwise attempt to effect changes and assert influence on our board of directors and management. While we strive to maintain constructive, ongoing communications with all of our stockholders, and welcome their views and opinions with the goal of enhancing value for all stockholders, activist campaigns that contest or conflict with our strategic direction or seek changes in the composition of our board of directors could have an adverse effect on our operating results and financial condition. A proxy contest would require us to incur significant legal and advisory fees, proxy solicitation expenses and administrative and associated costs and require significant time and attention by our board of directors and management, diverting their attention from the pursuit of our business strategy. Any perceived uncertainties as to our future direction and control, our ability to execute on our strategy, or changes to the composition of our board of directors or senior management team arising from a proxy contest could lead to the perception of a change in the direction of our business or instability which may be exploited by our competitors, result in the loss of potential business opportunities, and make it more difficult to pursue our strategic initiatives or attract and retain qualified personnel and business partners, any of which could adversely affect our business and operating results. If individuals are ultimately elected to our Board with a specific agenda, it may adversely affect our ability to effectively implement our business strategy and create additional value for our stockholders. We may choose to initiate, or may become subject to, litigation as a result of the proxy contest or matters arising from the proxy contest, which would serve as a further distraction to our board of directors and management and would require us to incur significant additional costs. In addition, actions such as those described above could cause significant fluctuations in our stock price based upon temporary or speculative market perceptions or other factors that do not necessarily reflect the underlying fundamentals and prospects of our business.

A securities class action lawsuit has been filed against us in the past, and a shareholder derivative lawsuit remains pending against us. Legal proceedings of this nature could have a material adverse effect on our business, results of operations and financial condition.

In 2015, a putative class action lawsuit and shareholder derivative lawsuit were filed against us and certain of our directors and officers, as described in Item 3--Legal Proceedings. A settlement of the class action lawsuit was approved in November of 2017, and a settlement of the derivative lawsuit is pending approval by the court, with the settlement approval hearing expected to take place in April of 2018. Lawsuits of this nature may divert financial and management resources that would otherwise be used to benefit our operations. Although we denied the material allegations in the lawsuits and defended ourselves vigorously, defending the lawsuits resulted in substantial costs and, in the case of the still-pending shareholder derivative lawsuit, could result in additional costs. In addition, we may be the target of securities-related litigation in the future. Such litigation could divert our management's attention and resources, result in substantial costs, and have an adverse effect on our business, results of operations and financial condition.

We maintain director and officer insurance that we regard as reasonably adequate to protect us from potential claims; however, we cannot assure you that it will. Further, if we are subject to future litigation, the costs of insurance may increase and the availability of coverage may decrease. As a result, we may not be able to maintain our current levels of insurance at a reasonable cost, or at all, which might make it more difficult to attract qualified candidates to serve as executive officers or directors of Resonant.

The price of our common stock may be volatile and the value of your investment could decline

Technology stocks have historically experienced high levels of volatility. The trading price of our common stock may fluctuate substantially, depending on many factors, some of which are beyond our control and may not be related to our operating performance. These fluctuations could cause you to lose all or part of your investment in our common stock. Factors that could cause fluctuations in the trading price of our common stock include, but are not limited to, the following:

- the progress, completion or failure of efforts to design our commercial products;
- a customer decision regarding incorporation of our designs into a commercial product;
- the loss of any customer relationship;
- the addition of a new customer relationship;
- mergers and acquisitions involving us, our customers or our competitors;
- price and volume fluctuations in the overall stock market from time to time;
- significant volatility in the market price and trading volume of technology companies in general;

- fluctuations in the trading volume of our shares or the size of our public float;
- actual or anticipated changes or fluctuations in our results of operations;
- whether our results of operations meet the expectations of securities analysts or investors;
- actual or anticipated changes in the expectations of investors or securities analysts;
- litigation involving us, our industry, or both;
- regulatory developments in the United States, foreign countries, or both;
- general economic conditions and trends;
- major catastrophic events;
- lockup releases, sales of large blocks of our common stock;
- departures of key employees; or
- an adverse impact on the company from any of the other risks cited herein.

In addition, if the market for technology stocks or the stock market in general, experience a loss of investor confidence, the trading price of our common stock could decline for reasons unrelated to our business, results of operations or financial condition. The trading price of our common stock might also decline in reaction to events that affect other companies in our industry even if these events do not directly affect us. Securities class action litigation has often been instituted against companies following periods of volatility in the overall market and in the market price of a company's securities. Two putative class action lawsuits were filed in March 2015 against the Company and certain of our members of the Board of Directors and executives, as described in *Item 3--Legal Proceedings*. In addition, we may be the target of securities-related litigation in the future, both related and unrelated to the existing class action lawsuits. Such litigation could divert our management's attention and resources, result in substantial costs, and have an adverse effect on our business, results of operations and financial condition.

Insiders have substantial control over us, which could limit your ability to influence the outcome of key transactions, including a change of control.

Our directors, executive officers and each of our stockholders who own greater than 5% of our outstanding common stock, in the aggregate, beneficially own approximately 57% of the outstanding shares of our common stock as of February 26, 2018. As a result, these stockholders will be able to influence or control matters requiring approval by our stockholders, including the election of directors and the approval of mergers, acquisitions or other extraordinary transactions. They may also have interests that differ from yours and may vote in a manner that is adverse to your interests. This concentration of ownership may have the effect of deterring, delaying or preventing a change of control of our company, could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company and might ultimately affect the market price of our common stock.

The requirements of being a public company may strain our resources, divert our management's attention and affect our ability to attract and retain qualified board members.

As a public company, we are subject to the reporting requirements of the Exchange Act, and are required to comply with the applicable requirements of the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The NASDAQ Stock Market and other applicable securities rules and regulations. Compliance with these rules and regulations have increased our legal and financial compliance costs, made some activities more difficult, time-consuming or costly and increased demand on our systems and resources. Among other things, the Exchange Act requires that we file annual, quarterly and current reports with respect to our business and results of operations and maintain effective disclosure controls and procedures and internal controls over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal controls over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could harm our business and results of operations. Although we have already hired additional employees to comply with these requirements, we may need to hire even more employees or retain professional service providers in the future, which will increase our costs and expenses.

In addition, we expect that these new rules and regulations will make it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

We are an "emerging growth company," and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors.

For so long as we remain an "emerging growth company" as defined in the JOBS Act, we may take advantage of certain exemptions from various requirements that are applicable to public companies that are not "emerging growth companies," including not being required to comply with the independent auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We may take advantage of these exemptions for so long as we are an "emerging growth company," which could be as long as five years following the completion of our initial public offering. Investors may find our common stock less attractive because we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock, and our stock price may be more volatile and may decline.

In addition, Section 107 of the JOBS Act also provides that an "emerging growth company" can take advantage of an extended transition period for complying with new or revised accounting standards. However, we chose to "opt out" of such extended transition period, and as a result, we will comply with new or revised accounting standards on the relevant dates adoption of such standards is required for non-emerging growth companies. Our decision to opt out of the extended transition period for complying with new or revised accounting standards is irrevocable.

We will remain an emerging growth company until the earliest of (a) the last day of our fiscal year during which we have total annual gross revenue of at least $1.0 billion; (b) the last day of our fiscal year following the fifth anniversary of the completion of our initial public offering; (c) the date on which we have, during the previous three-year period, issued more than $1.0 billion in non-convertible debt; or (d) the date on which we are deemed to be a "large accelerated filer" under the Securities Exchange Act of 1934, as amended, which would occur if the market value of our stock that are held by non-affiliates exceeds $700 million as of the last business day of our most recently completed second fiscal quarter. Once we cease to be an emerging growth company, we will not be entitled to the exemptions provided in the JOBS Act.

We are required to evaluate our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act of 2002, and any adverse results from such evaluation could result in a loss of investor confidence in our financial reports and have an adverse effect on our stock price.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, we are required to furnish a report by our management on our internal control over financial reporting. Such report contains, among other matters, an assessment of the effectiveness of our internal control over financial reporting as of the end of our fiscal year, including a statement as to whether or not our internal control over financial reporting is effective. This assessment must include disclosure of any material weaknesses in our internal control over financial reporting identified by management. If we are unable to assert that our internal control over financial reporting is effective, we could lose investor confidence in the accuracy and completeness of our financial reports, which could have an adverse effect on our stock price.

Our independent registered public accounting firm is not required to formally attest to the effectiveness of our internal control over financial reporting until the later of the date we are an accelerated filer or large accelerated filer, or the date we are no longer an "emerging growth company." At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed or operating. Our remediation efforts may not enable us to avoid a material weakness in the future.

If securities or industry analysts do not publish research or reports about our business, or publish inaccurate or unfavorable research reports about our business, our share price and trading volume could decline.

The trading market for our common stock will, to some extent, depend on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If one or more of the analysts who cover us should downgrade our shares or change their opinion of our business prospects, our share price would likely decline. If one or more of these analysts ceases coverage of our company or fails to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

We do not intend to pay dividends for the foreseeable future and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any dividends on our common stock. We intend to retain any earnings to finance the operation and expansion of our business, and we do not anticipate paying any cash dividends in the future. As a result, you may only receive a return on your investment in our common stock if the market price of our common stock increases.

Our charter documents and Delaware law could discourage takeover attempts and lead to management entrenchment.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it difficult for stockholders to elect directors that are not nominated by the current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions include:

- the ability of our board of directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairman of our board of directors, the chief executive officer, the president (in the absence of a chief executive officer) or a majority vote of our board of directors, which could delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors;
- the requirement for the affirmative vote of holders of at least 66-2/3% of the voting power of all of the then-outstanding shares of the voting stock, voting together as a single class, to amend the provisions of our amended and restated certificate of incorporation relating to the management of our business or our amended and restated bylaws, which may inhibit the ability of an acquirer to effect such amendments to facilitate an unsolicited takeover attempt;
- the ability of our board of directors, by majority vote, to amend our amended and restated bylaws, which may allow our board of directors to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquirer to amend our amended and restated bylaws to facilitate an unsolicited takeover attempt; and
- advance notice procedures with which stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

Risks Related to Government Regulation

Our failure to comply with U.S. laws and regulations relating to the export and import of goods, technology, and software could subject us to penalties and other sanctions and restrict our ability to license and develop our filter designs.

We are obligated by law to comply with all U.S. laws and regulations governing the export and import of goods, technology, and services, including the International Traffic in Arms Regulations, or ITAR, the Export Administration Regulations, or EAR, regulations administered by the Department of Treasury's Office of Foreign Assets Control, and regulations administered by the Bureau of Alcohol Tobacco Firearms and Explosives governing the importation of items on the U.S. Munitions Import List. Pursuant to these regulations, we are responsible for determining the proper licensing jurisdiction and export classification of our filter designs, and obtaining all necessary licenses or other approvals, if required, for exports and imports of technical data, and software, or for the provision of technical assistance or other defense services to or on behalf of foreign persons. We are also required to obtain export licenses, if required, before employing or otherwise utilizing foreign persons in the performance of our contracts if the foreign person will have access to export-controlled technical data or software. The violation of any of the applicable laws and regulations could subject us to administrative, civil, and criminal penalties.

These regulations could restrict our ability to license existing filter designs and develop new designs. For example, as a result of ITAR requirements, we are unable to supply certain products to China satellite companies or end users, which comprise a significant part of the overall satellite market. Changes in our designs or changes in export and import regulations may create delays in the introduction of our designs in international markets, prevent our customers with international operations from deploying products incorporating our designs throughout their global systems or, in some cases, prevent the export or import of product including our designs to certain countries altogether. Any change in export or import regulations or related legislation, shift in approach to the enforcement or scope of existing regulations, or change in the countries, persons, or technologies targeted by such regulations, could result in decreased use of our designs by, or our ability to export or license our designs to, existing or potential customers with international operations and decreased revenue. Additionally, failure to comply with these laws could result in sanctions by the U.S. government, including substantial monetary penalties, denial of export privileges, and debarment from government contracts.

If we fail to comply with anti-bribery laws, including the U.S. Foreign Corrupt Practices Act, or FCPA, we could be subject to civil and/or criminal penalties.

As a result of our international operations, we may be subject to anti-bribery laws, including the FCPA, which prohibits companies from making improper payments to foreign officials for the purpose of obtaining or keeping business. If we fail to comply with these laws, the U.S. Department of Justice, the Securities and Exchange Commission, or SEC, or other U.S. or foreign governmental authorities could seek civil and/or criminal sanctions, including monetary fines and penalties against us or our employees, as well as additional changes to our business practices and compliance programs, which could have a material adverse effect on our business, results of operations, or financial condition.

Developments stemming from changes in the Government administrations, both foreign and domestic, could adversely affect our business.

Changes in administration could result in changes to political, regulatory and economic laws, policies and conditions that could severely and negatively impact our business. For example, the Trump administration has expressed doubt regarding existing trade agreements, such as the North American Free Trade Agreement (NAFTA), issued an executive order announcing the United States' withdrawal from the Trans-Pacific Partnership (TPP), and has raised the possibility of imposing tariffs on goods imported into the United States, including from China. Our customers are located around the world, and we expect that international sales will comprise a substantial portion of total sales in the future. In addition, we expect that products utilizing our designs will be produced, assembled and tested at third-party manufacturing facilities located primarily in Asia. Changes in U.S. political, regulatory and economic conditions or laws and policies governing U.S. tax laws, foreign trade, manufacturing, and development and investment in the countries where we or our customers operate could adversely affect our operating results and our business.

Changes in current laws or regulations or the imposition of new laws or regulations could impede the license of our designs or otherwise harm our business.

Wireless networks can only operate in the frequency bands, or spectrum, allowed by regulators and in accordance with rules governing how the spectrum can be used. The Federal Communications Commission, or the FCC, in the United States, as well as regulators in foreign countries, have broad jurisdiction over the allocation of frequency bands for wireless networks. We therefore will rely on the FCC and international regulators to provide sufficient spectrum and usage rules. For example, countries such as China, Japan or Korea heavily regulate all aspects of their wireless communication industries, and may restrict spectrum allocation or usage. If this were to occur, it would make it difficult for us to license our designs for use in mobile devices in that region.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We maintain our principal office, totaling approximately 9,000 square feet of office and laboratory space, in Goleta, California under a lease that expires in July 2018 and provides us with an option for an additional year. We lease an additional 5,250 square feet of office space in Burlingame, California under a lease that expires in January 2022 and provides us with an option for an additional two years. This facility is used by members of our technical team resident in the San Francisco Bay area. Our corporate headquarters in Goleta, California is not sufficient for our planned growth and we intend to relocate to a larger facility during 2018.

ITEM 3. LEGAL PROCEEDINGS

Beginning on March 17, 2015, three putative class action lawsuits were filed in the United States District Court for the Central District of California, naming us, Terry Lingren and John Philpott as defendants. The three lawsuits were consolidated into a single putative class action, In re Resonant Inc. Securities Litigation, Case No. 15-cv-01970 SJO (MRWx). On February 23, 2016, the plaintiffs filed a consolidated second amended complaint, purporting to assert claims under the federal securities laws against us, Terry Lingren, John Philpott, and the underwriter of our May 29, 2014 IPO. In the consolidated second amended complaint, the plaintiffs purported to be acting on behalf of a class consisting of purchasers or acquirers of our common stock between November 6, 2014 and April 2, 2015, as well as a class of persons or entities who purchased or acquired our shares in (or traceable to) our IPO. The plaintiffs alleged that, as a result of the defendants' allegedly false and/or misleading statements and/or omissions concerning our business, operations, prospects and performance, our common stock traded at artificially inflated prices between November 6, 2014 and April 2, 2015. On July 11, 2016, the court entered an order granting in part and denying in part our motion to dismiss the consolidated second amended complaint. The court granted the motion to dismiss with respect to plaintiffs' claims under Section 11 of the Securities Act of 1933 and Section 20(a) of the Securities Exchange Act of 1934. The court also granted the motion to dismiss plaintiffs' claims under Section 10(b) of the Securities Exchange Act of 1934 and Rule 10b-5 thereunder to the extent those claims were premised on alleged misstatements made on February 26, 2015. The court denied the motion to dismiss with respect to plaintiffs' claims under Section 15 of the Securities Act of 1933, and with respect to plaintiffs' claims under Section 10(b) of the Securities Exchange Act of 1934 and Rule 10b-5 thereunder to the extent those claims were premised on alleged misstatements made in November and December of 2014 and January of 2015. On October 26, 2016, the court issued an order clarifying its July 11, 2016 order on the motion to dismiss, making clear that the court's actual intent was to grant the motion to dismiss with respect to the claims under Section 15 of the Securities Act of 1933, while denying the motion to dismiss with respect to the claims under Section 20(a) of the Securities Exchange Act of 1934.

On November 22, 2017, the court granted final approval of a settlement which fully resolved plaintiffs' claims and provided for a release of all claims asserted in the class action litigation, bringing the litigation to a close. The settlement amount was paid by our insurance carrier.

On September 24, 2015, a purported shareholder derivative action was filed in the United States District Court for the Central District of California, and is pending before the same federal district court judge to whom the putative class action was assigned. In the derivative action, the plaintiff alleges that certain of our officers and directors breached their fiduciary duties to us, including by allegedly violating the federal securities laws and exposing us to possible financial liability.

The parties to the shareholder derivative action have reached a settlement that, if approved by the court, will fully resolve plaintiff's claims and provide for the release of all claims asserted in the litigation. On February 1, 2018, the court entered an order granting preliminary approval of the settlement. The court has scheduled a final approval hearing to take place on April 2, 2018. We can make no assurances that the court will grant final approval of the settlement.

We intend to continue to defend ourselves vigorously in these actions.

We are not party to any other legal proceedings. We may, from time to time, be party to litigation and subject to claims incident to the ordinary course of business. As our growth continues, we may become party to an increasing number of litigation matters and claims. The outcome of litigation and claims cannot be predicted with certainty, and the resolution of any future matters could materially affect our future financial position, results of operations or cash flows.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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PART II

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

Market Information for Common Stock

Our common stock is listed on the NASDAQ Capital Market under the symbol 'RESN". The following table sets forth for the periods indicated the high and low sale prices per share of our common stock as reported on the NASDAQ Capital Market:

	High	Low
Fiscal 2016		
First Quarter	$ 3.50	$ 1.69
Second Quarter	$ 5.10	$ 2.50
Third Quarter	$ 6.76	$ 4.01
Fourth Quarter	$ 5.65	$ 4.25
Fiscal 2017		
First Quarter	$ 5.39	$ 4.00
Second Quarter	$ 5.55	$ 3.82
Third Quarter	$ 5.30	$ 4.11
Fourth Quarter	$ 8.55	$ 4.09

On February 26, 2018, the last reported sale price of our common stock on the NASDAQ Capital Market was $4.47 per share.

Holders of Record

As of December 31, 2017, we had 67 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

Dividend Policy

We have never declared or paid cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future, if at all. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

Recent Sale of Unregistered Securities

MZ Group Company

On December 21, 2017, we issued a restricted stock unit, or MZ RSU, for an aggregate of 20,000 shares of common stock to MZHCI, LLC, an MZ Group Company, as partial consideration for investor relations advisory services to be rendered by MZ Group. Of the shares underlying the MZ RSU, 6,666 shares vested on January 2, 2018, and 6,667 shares will vest on each of April 2, 2018 and July 2, 2018 so long as MZ Group continues to provide investor relations advisory services to us. The issuance of the MZ RSU was exempt from the registration requirements of the Securities Act of 1933 by virtue of Section 4(a)(2) thereof as a transaction not involving a public offering. MZHCI, LLC represented its intention to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof. MZHCI, LLC had adequate access to information about Resonant, and the issuance of the securities was made without any general solicitation or advertising.

Use of Proceeds

Not applicable.

ITEM 6. SELECTED FINANCIAL DATA

Not applicable.

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

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with the consolidated financial statements and the related notes to the consolidated financial statements included later in this Annual Report on Form 10-K. In addition to historical financial information, the following discussion contains forward-looking statements that reflect our plans, estimates, beliefs and expectations that involve risks and uncertainties. Our actual results and the timing of events could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this Annual Report on Form 10-K, particularly in "Risk Factors" and "Special Note Regarding Forward-Looking Statements."

Overview

Resonant is a late-stage development company that has created an innovative software, intellectual property, or IP, and services platform that has the ability to increase designer efficiency, reduce the time to market and lower unit costs in the designs of filters for radio frequency, or RF, front-ends for the mobile device industry. The RF front-end, or RFFE, is the circuitry in a mobile device responsible for analog signal processing and is located between the device's antenna and its digital circuitry. The software platform we are developing is based on fundamentally new technology that we call Infinite Synthesized Networks®, or ISN®, to configure and connect resonators, the building blocks of RF filters. Filters are a critical component of the RF front-end used to select desired radio frequency signals and reject unwanted signals. Our ISN® platform allows us to develop unique, custom designs that address the increasing complexity of the RFFE due to carrier aggregation (the combining of multiple frequencies into a single data stream to increase throughput through higher data rates), or CA, by both reducing the size of the filter and improving performance. Our goal is to utilize our ISN® platform to support our customers in reducing their time to develop complex filter and module designs, to access new classes of filter designs, and to do it more cost effectively.

We are commercializing our technology through the creation of filter designs that address the problems in the high growth RFFE industry created by the growing number of frequency bands in mobile devices. The worldwide adoption of Long Term Evolution, or LTE, as the global standard, and the use of mobile devices to access the Internet, has resulted in massive proliferation of frequency bands which, when combined with CA for higher data rates and multiple input multiple output, or MIMO, has resulted in an ever-increasing number and complexity of filters in the RFFE. We have developed and continue to expand a series of single-band designs for frequency bands presently dominated by larger and more expensive bulk acoustic wave, or BAW, filters. We are also developing multiplexer filter designs for two or more bands to address the CA requirements of our customers. We are using our ISN® platform to efficiently integrate these designs into RF modules for our module customers. Finally, we are developing unique filter designs, enabled by ISN®, to replace multiple filters and associated componentry for many bands, with higher performance. Currently, we are leveraging ISN® to develop these designs targeted for either the Surface Acoustic Wave (SAW) or Temperature Compensated, Surface Acoustic Wave (TC-SAW) manufacturing processes. In order to succeed, we must convince RFFE suppliers that our filter designs can significantly reduce the size and cost of their products.

We believe licensing our designs is the most direct and effective means of validating our ISN® platform and related IP libraries to address this rapidly growing market. Our target customers make part or all of the RFFE. We intend to retain ownership of our designs, and we expect to be compensated through license fees and royalties based on sales of RFFE filters that incorporate our designs. We currently do not intend to manufacture or sell any physical products or operate as a contract design company developing designs for a fee.

Our typical customer engagement process begins with the execution of a Joint Development Agreement, or JDA, and License Agreement, or LA, which provides for a typical development cycle of six to nine months, for specific bands. Depending on the complexity of the design, we estimate that initial samples of products to original equipment manufacturers, or OEMs, will occur typically within nine to thirty-six months following execution of a license agreement. We classify these new designs as either ISN Ready (9-12 months), ISN Pilot (12-18 months), ISN Advanced (18-36 months) or ISN Development (Custom). It is following these development cycles that designs are manufactured and sampled to OEM customers. OEMs can take from three to six months, or longer, to qualify a design as fit for use, reliable and ready for mass production. The point at which an OEM begins taking product from our customers in mass production is typically when royalty revenues would begin. Our customer agreements typically provide for upfront design fees and royalty payments for each unit sold using our filter designs and typically last for a minimum of two years, and in many cases for the life of the design.

We began 2016 with no customers under contract and no license agreements. We ended 2016 with six customers and more than 25 designs under contract. These included a wide range of complex designs ranging from sophisticated "WiFi Co-existence" filters to high frequency duplexers and quadplexers. In late 2016, we expanded our customer focus beyond just filter manufacturers. Through the capabilities provided by our ISN® platform, we enabled a new class of customer - fabless filter manufacturers. These companies do not have their own internal filter fabrication facility, or Fab, and typically already would be supplying other products in the RFFE to the OEMs and as a result do not require a protracted, new vendor, qualification process in order to supply parts. It is through our existing customer relationships that we are able to facilitate these third-party Fab relationships, that leverage our ISN®tools to deliver cutting edge filter designs to these fabless filter customers.

During 2017, we continued to expand our engagements with existing customers while identifying and contracting with new customers and as a result, ended the year with eight total customers and more than double the number of contracted designs. In many cases the expansion in the number of contracted sockets came from customers who already had a significant investment in working with Resonant and confidence in the capabilities of the ISN® platform.

Also, in 2017, in order to further facilitate our fabless filter program, and to provide manufacturing stability across the supply chain to our fully integrated filter customers, we embarked on the creation of our ISN® Foundry Program. Foundries joining Resonant's program first complete a foundry evaluation process to ensure alignment with our customers for filter performance, manufacturing quality and capacity, and business practices. Once the evaluation is completed, the foundry runs a characterization lot, used to create a foundry process design kit, after which, we are ready to start designs for manufacture in the foundry. Packaging/Back-end vendors can also join the program by completing a back-end evaluation process to match their capabilities with foundry partners and our customers. It is through this program that we can enable a secure supply chain for all our customers.

We plan to continue to pursue filter design projects with existing and potential customers and other strategic partners. These types of arrangements may subsidize the expansion of our IP libraries and further the development of our ISN® platform, as well as offer complementary technology and market intelligence. We are also investigating the potential of licensing part or all of our ISN® software design suite to potential customers in the RFFE industry. However, we intend to retain ownership of our technology, software, designs and related improvements. Our goal is to establish and leverage alliances with new and existing customers, who will help grow the market for our designs by integrating them with their own proprietary technology and products, or by using our software products for their own designs, thus combining their own particular strengths with ours to provide an extensive array of solutions.

Our inception date is May 29, 2012. We commenced business on July 6, 2012 and completed our initial public offering, or IPO, on May 29, 2014.

In July 2016, we acquired GVR Trade S.A., or GVR, by purchasing all of the issued and outstanding capital stock of GVR for a purchase price of approximately $1.2 million consisting of $661,000 in cash and 125,000 shares of our common stock. GVR is a Swiss-based company specializing in the consultation and design of SAW and BAW devices. We believe the acquisition was a logical extension to the existing long-term cooperation between our two companies and will further expand our ability to support licensing agreements for both current and future partners and customers. GVR is a wholly owned direct subsidiary of Resonant.

We are using the net proceeds from our financings for product development to commercialize our technology, research and development, the development of our patent strategy and expansion of our patent portfolio, maturing and commercializing our ISN® tools, as well as for working capital and other general corporate purposes. Our costs include employee salaries and benefits, compensation paid to consultants, capital costs for research and other equipment, costs associated with development activities including travel and administration, legal expenses, sales and marketing costs, general and administrative expenses, and other costs associated with a late-stage, publicly-traded technology company. However, our costs are dependent on the nature of our development efforts and our success in commercialization. We anticipate adding employees for research and development, as well as general and administrative functions, to support our efforts. We expect to incur consulting expenses related to technology development and other efforts as well as legal and related expenses to protect our intellectual property.

The amounts that we actually spend for any specific purpose may vary significantly and will depend on a number of factors including, but not limited to, our expected cash resources, the pace of progress of our commercialization and development efforts, actual needs with respect to product testing, development and research, market conditions, and changes in or revisions to our marketing strategies. In addition, we may invest in complementary products, technologies or businesses.

As of December 31, 2017 we had 49 employees, 37 of which are on our technical staff and 12 of which are devoted to finance, sales, marketing and administrative matters. We also use several outside consultants.

Our patent portfolio at December 31, 2017 is comprised of more than 125 issued and pending patents.

We have earned minimal revenues since inception, and our operations have been funded with initial capital contributions and proceeds from the sale of equity securities and debt. We have incurred accumulated losses totaling $67.8

million from inception through December 31, 2017. Our losses are primarily the result of research and development costs associated with commercializing our technology, combined with start-up and operating costs including those related to financings and being a public company. We expect to continue to incur substantial costs for commercialization of our technology on a continuous basis because our business model involves developing and licensing custom filter designs.

Our consolidated financial statements account for the continuation of our business as a going concern. We are subject to the risks and uncertainties associated with a new business. Our principal source of liquidity as of December 31, 2017 consists of existing cash and cash equivalents of $19.5 million. During the year ended December 31, 2017, we used $15.6 million of cash and investments for operating activities, the purchase of property and equipment, and expenditures for patents. Due to these conditions, along with planned growth, substantial doubt exists as to our ability to continue as a going concern. After evaluation of these conditions, we believe our current resources will provide sufficient funding for planned operations into the second half of 2018. If necessary, we will seek to raise additional capital from the sale of equity securities or the incurrence of indebtedness to allow us to continue operations. There can be no assurance that additional financing will be available to us on acceptable terms, or at all. Additionally, if we issue additional equity securities to raise funds, whether to existing investors or others, the ownership percentage of our existing stockholders would be reduced. New investors may demand rights, preferences or privileges senior to those of existing holders of common stock. Additionally, we may be limited as to the amount of funds we can raise pursuant to SEC rules and the continued listing requirements of NASDAQ. If we cannot raise needed funds, we might be forced to make substantial reductions in our operating expenses, which could adversely affect our ability to implement our business plan and ultimately our viability as a company. These consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classification of liabilities that might result from this uncertainty.

Results of Operations

Comparison of the Years Ended December 31, 2016 and 2017

Revenues. Revenues consist of the recognized portion of amounts received from customers for the development of our filter designs, milestone payments based on the achievement of specific milestones and royalties from shipments of our licensed designs. The revenues related to upfront payments associated with our filter design development contracts are recognized ratably over the estimated development period associated with that upfront payment. For the years ended December 31, 2016 and 2017, we recognized $302,000 and $653,000, respectively, of revenue primarily related to upfront payments for the development of filter designs. We expect revenues to continue to be recorded due to the $143,000 of deferred revenue we have recorded as of December 31, 2017. We also believe that based on the potential future milestone payments and royalties from our license agreements, there may be future revenues recorded.

Research and Development. Research and development expenses consist of the direct engineering and other costs associated with the development and commercialization of our technology, including the development of filter designs for our customers. These consist primarily of the cost of employees and consultants, including stock-based compensation, and to a lesser extent costs for equipment, software and supplies. We also include the costs for our intellectual property development program under research and development. This program focuses on patent strategy and invention extraction.

Research and development expenses increased $3.2 million from $6.9 million in 2016 to $10.0 million in 2017. The increase was the result of the increased payroll, benefit costs, consulting costs, travel and development costs related to increased activity on our various filter designs under development. We anticipate that our research and development expenses will continue to increase as a result of our planned growth. During the year ended December 31, 2017, we expanded our research and development employees from 26 at the beginning of the year to 37 at the end of the year.

General and Administrative Expenses. General and administrative expenses include salaries, stock-based compensation, taxes and employee benefits for the executives and administrative staff. It also includes expenses for corporate overhead such as rent for our facilities, travel expenses, telecommunications, investor relations, insurance, professional fees and business consulting fees.

General and administrative expenses increased $0.9 million, from $8.7 million in 2016 to $9.6 million in 2017. The increase resulted from increased payroll and stock compensation expenses associated with increased headcount, travel expenses associated with business development efforts and increased rent expenses in connection with the expansion of our facilities to accommodate our growth. The increase is offset by decreases related to certain expenses which occurred in 2016 but not in 2017, including $500,000 of legal expenses related to legal proceedings, $295,000 of senior executive transition costs and $92,000 of business acquisition costs. We anticipate that our general and administrative expenses will likely continue to increase as a result of planned growth.

Interest Income. Interest income increased by $45,000 from $22,000 in 2016 to $67,000 in 2017 primarily due to increased cash and investment balances. We expect interest income to fluctuate in proportion to our cash and investment balances.

Warrant Inducement Expense. In December 2017 we entered into warrant exercise agreements with certain holders of Private Placement Warrants in order to induce the holders to exercise their warrants in full and we paid the warrant holders an inducement fee. The inducement offer was considered a modification to the warrant and we were required to remeasure the fair value of the warrants immediately prior to, and after, the modification. The change in fair value due to modification totaled $4.3 million, and when combined with the cash inducement of $7.0 million paid to the warrant holders, resulted in $2.7 million of warrant inducement expense. There was no expense for the year ended December 31, 2016 as there were no such agreements during the year.

Other Expense. Other expense increased from $1,000 in 2016 to $10,000 in 2017, primarily related to the effects of foreign currency transactions associated with our business operations overseas.

Income Taxes. We have earned minimal revenues and are currently operating at a loss. In addition to minimum taxes in the States where we conduct business, we are also responsible for income taxes in Switzerland related to the earnings of our foreign subsidiary, GVR. The provision for (benefit from) income taxes primarily represents the net change in deferred income taxes of GVR.

Liquidity and Capital Resources

Financing Activities

We have earned minimal revenues since inception. Our operations have been funded with initial capital contributions and proceeds from the sale of equity securities and debt.

As of December 31, 2017, we have raised aggregate gross proceeds of $62.4 million through the use of loans, convertible debt and equity through an IPO, private placement financing and secondary offering of our common stock.

We had current assets of $20.2 million and current liabilities of $3.1 million at December 31, 2017, resulting in working capital of $17.1 million. This compares to working capital of $7.0 million at December 31, 2016. The change in working capital is primarily the result of the cash provided by financing activities offset by use of cash in our normal business operations.

Our consolidated financial statements account for the continuation of our business as a going concern. We are subject to the risks and uncertainties associated with a new business. Our principal source of liquidity as of December 31, 2017 consists of existing cash and cash equivalents of $19.5 million. During the year ended December 31, 2017, we used $15.6 million of cash and investments for operating activities, the purchase of property and equipment, and expenditures for patents. Due to these conditions, along with planned growth, substantial doubt exists as to our ability to continue as a going concern. After evaluation of these conditions, we believe our current resources will provide sufficient funding for planned operations into the second half of 2018. If necessary, we will seek to raise additional capital from the sale of equity securities or the incurrence of indebtedness to allow us to continue operations. There can be no assurance that additional financing will be available to us on acceptable terms, or at all. Additionally, if we issue additional equity securities to raise funds, whether to existing investors or others, the ownership percentage of our existing stockholders would be reduced. New investors may demand rights, preferences or privileges senior to those of existing holders of common stock. Additionally, we may be limited as to the amount of funds we can raise pursuant to SEC rules and the continued listing requirements of NASDAQ. If we cannot raise needed funds, we might be forced to make substantial reductions in our operating expenses, which could adversely affect our ability to implement our business plan and ultimately our viability as a company. These consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classification of liabilities that might result from this uncertainty.

We have a Form S-3 universal shelf registration statement on file with the SEC. The universal shelf registration statement on Form S-3 permits us to sell, in one or more public offerings, shares of our common stock, shares of preferred stock or debt securities, or any combination of such securities and warrants to purchase securities, for proceeds in an aggregate amount of up to $35.0 million, subject to limitations on the amount of securities we may sell in any twelve-month period. As of December 31, 2017, we have raised a total of $11.5 million of gross proceeds from the sale of 2,715,000 shares of our common stock, leaving approximately $23.5 million of securities available for issuance pursuant to the Form S-3. The Form S-3 will expire in May 2019.

Cash Flow Analysis

Operating activities used cash of $10.7 million in 2016 and $14.5 million in 2017. The increase is primarily the result of increased payroll-related and travel costs associated with the increase in headcount as we have expanded our product development, business development and sales and marketing efforts.

Investing activities used cash of $2.8 million in 2016 and provided cash of $3.6 million in 2017. In 2016, the cash used was a result of the net purchases of investments using cash acquired through the sale of equity, purchases of property and equipment, expenditures for patents, and the acquisition of GVR. In 2017, the cash provided was a result of the redemptions of investments held to maturity, offset by the cash used to purchase property and equipment and expenditures for patents.

Financing activities provided cash of $16.1 million in 2016 and $25.3 million in 2017. The cash provided in 2016 was the result of the net proceeds from the sale of equity securities in our private placement financing in April 2016 and underwritten public offering in September 2016. The cash provided in 2017 was the result of the net proceeds from the sale of equity securities in our private placement financings completed in February 2017 and September 2017, and net proceeds from the exercise of warrants for cash.

Off-Balance Sheet Transactions

We do not have any off-balance sheet arrangements.

Contractual Obligations and Known Future Cash Requirements

Indemnification Agreements

In the ordinary course of business, we may enter into agreements of varying scope and terms pursuant to which we agree to indemnify customers, vendors, lessors, business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of breach of such agreements, services to be provided by us or from intellectual property infringement claims made by third parties. In addition, we have entered into indemnification agreements with directors and certain officers and employees that will require us, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers or employees. We are currently indemnifying pursuant to these arrangements, certain of our officers and directors and the underwriter of our IPO against claims asserted in the putative securities class action lawsuit and related purported shareholder derivate action filed in the United States District Court for the Central District of California, discussed in Part I, Item 3, "Legal Proceedings," of this Annual Report on Form 10-K. No other demands have been made upon us to provide indemnification under such agreements and there are no other claims that we are aware of that could have a material effect on our consolidated balance sheets, consolidated statements of comprehensive loss, consolidated statements of stockholders' equity or consolidated statements of cash flows.

Operating Leases

We lease various office facilities, including our corporate headquarters in Goleta, California and our office in Burlingame, California, under operating lease agreements. The terms of the lease agreements provide for rental payments on a graduated basis. We recognize rent expense on a straight-line basis over the lease periods.

Commitments

As of December 31, 2017, our principal commitments consisted of obligations under the operating leases for our offices. The following table summarizes our future minimum payments under these arrangements as of December 31, 2017:

	Payments Due by Period				
Contractual Obligations	**Total**	**Less Than 1 Year**	**1-3 Years**	**3-5 Years**	**More Than 5 Years**
Operating lease commitments	$ 1,103,000	$ 430,000	$ 430,000	$ 243,000	$ —

Critical Accounting Policies and Estimates

Our discussion and analysis of financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in conformity with accounting principles generally accepted in the United States of America. Certain accounting policies and estimates are particularly important to the understanding of our financial position and results of operations and require the application of significant judgment by our management or can be materially affected by changes from period to period in economic factors or conditions that are outside of our control. As a result, they are subject to an inherent degree of uncertainty. In applying these policies, our management uses their judgment to determine the appropriate assumptions to be used in the determination of certain estimates. Those estimates are based on our historical operations, our future business plans and projected financial results, the terms of existing contracts, our observance of trends in the industry, information provided by our customers and information available from other outside sources, as appropriate. While our significant accounting policies are described in the notes to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K, we believe that the following critical accounting policies are most important to understanding and evaluating our reported financial results.

Investments—Securities held-to-maturity: Management determines the appropriate classification of debt securities at the time of purchase and reevaluates such designation as of each statement of financial position date. Debt securities are classified as held-to-maturity when we have the positive intent and ability to hold the securities to maturity. Held-to-maturity securities are stated at amortized cost, adjusted for amortization of premiums and accretion of discounts to maturity computed under the effective interest method. Such amortization is included in investment income. Interest on securities classified as held-to-maturity is included in investment income.

With respect to debt securities, when the fair value of a debt security classified as held-to-maturity or available for sale is less than its amortized cost, management assesses whether or not: (i) it has the intent to sell the security or (ii) it is more likely than not that the Company will be required to sell the security before its anticipated recovery. If either of these conditions is met, the Company must recognize as other-than-temporary impairment through earnings for the difference between the debt security's amortized cost basis and its fair value, and such amount is included in net securities gains (losses).

For debt securities that do not meet the above criteria and the Company does not expect to recover a security's amortized cost basis, the security is considered other-than-temporarily impaired. For these debt securities, the Company separates the total impairment into the credit loss component and the amount of the loss related to other factors. In order to determine the amount of the credit loss for a debt security, the Company calculates the recovery value by performing a discounted cash flow analysis based on the current cash flows and future cash flows management expects to recover. The discount rate is the effective interest rate implicit in the underlying debt security. The amount of the total other-than-temporary impairment related to credit loss is recognized in earnings and is included in net securities gains (losses). The amount of the total other-than-temporary impairment related to other factors is recognized in other comprehensive income. For debt securities that have recognized as other-than-temporary impairment through earnings, if through subsequent evaluation there is a significant increase in the cash flow expected, the difference between the amortized cost basis and the cash flows expected to be collected is accreted as interest income.

During the year ended December 31, 2016, we invested in corporate paper and federally insured certificates of deposit that were classified as held-to-maturity. As of December 31, 2016, the amortized cost value was $4.7 million with an unrealized loss of $2,000 and a fair value of $4.7 million. The investments consisted of $4.0 million of corporate paper, of which $3.0 million matured in January of 2017 and $1.0 million matured in February of 2017, and $747,000 of certificates of deposit which matured in increments of $250,000 between January and March of 2017. We did not recognize an other-than-temporary impairment gain or loss or a comprehensive gain or loss as of December 31, 2016.

During 2017, we invested in commercial papers and certificates of deposit that were classified as investments held-to-maturity. Additionally, we maintained money market fund balances that were classified as cash and cash equivalents. As of December 31, 2017, all of our investments held-to-maturity have matured and we have no investments classified as held-to-maturity.

Research and Development—Costs and expenses that can be clearly identified as research and development are charged to expense as incurred in accordance with Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 730-10, *Research and Development*.

Stock-Based Compensation—We account for stock options in accordance with ASC Topic 718, *Compensation-Stock Compensation*. For stock options issued to employees and directors we use an option pricing model for estimating fair value at the date of grant. We account for restricted stock units issued to employees at fair value, based on the market price of our stock on the date of grant, net of estimated forfeitures. Compensation expense is recognized for the portion of the award that is ultimately expected to vest over the period during which the recipient renders the required services to the Company generally using the straight-line single option method. The fair value of non-employee restricted stock units awarded are remeasured as the awards vest, and the resulting increase in fair value, if any, is recognized as compensation expense in the period the related services are rendered.

Income Taxes—We account for income taxes in accordance with ASC Topic 740, *Income Taxes*, or ASC 740, which requires the recognition of deferred tax assets and liabilities for the future consequences of events that have been recognized in our consolidated financial statements or tax returns. The measurement of the deferred items is based on enacted tax laws. In the event the future consequences of differences between financial reporting bases and the tax bases of our assets and liabilities result in a deferred tax asset, ASC 740 requires an evaluation of the probability of being able to realize the future benefits indicated by such asset. A valuation allowance related to a deferred tax asset is recorded when it is more likely than not that some portion or the entire deferred tax asset will not be realized. As part of the process of preparing our consolidated financial statements, we are required to estimate our income tax expense in each of the jurisdictions in which we operate. We also assess temporary differences resulting from differing treatment of items for tax and accounting differences. We record a valuation allowance to reduce the deferred tax assets to the amount of future tax benefit that is more likely than not to be realized. For the period when we were organized as a limited liability company, we were treated as a partnership for federal and state income tax purposes under the entity classification domestic default rules. As of December 31, 2016 and 2017, no liability for unrecognized tax benefits was required to be reported. We recognize interest and penalties related to income tax matters in income taxes, and there were none for the years ended December 31, 2016 and December 31, 2017.

We have filed, or are in the process of filing, tax returns that are subject to audit by the respective tax authorities. Although the ultimate outcome would be unknown, we believe that any adjustments that may result from tax return audits are not likely to have a material, adverse effect on our consolidated results of operations, financial position or cash flows.

Effective November 2015, the FASB issued final guidance in Accounting Standards Update 2015-17, *Balance Sheet Classification of Deferred Taxes*, which requires companies to classify all deferred tax assets and liabilities as noncurrent on the balance sheet instead of separating deferred taxes into current and noncurrent amounts. The guidance is effective for financial statements issued for annual periods beginning after December 15, 2016, and interim periods within those annual periods. Early adoption is permitted for all companies in any interim or annual period, and may be adopted on either a prospective or retrospective basis. We have adopted this standard for the interim and annual period ending December 31, 2015 on a prospective basis.

Earnings Per Share, or EPS—EPS is computed in accordance with ASC Topic 260, *Earnings per Share*, and is calculated using the weighted average number of common shares outstanding during each period. Diluted EPS assumes the conversion, exercise or issuance of all potential common stock equivalents unless the effect is to reduce a loss or increase the income per share. Potential common shares consist of the incremental common shares issuable upon the exercise of stock options (using the treasury stock method), the exercise and/or conversion of our convertible notes and warrants (using the if-converted method).

Recently Issued and Adopted Accounting Pronouncements

Recent accounting pronouncements are detailed in Note 2 to our consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not applicable.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors of Resonant Inc.
Goleta, California

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Resonant Inc. (the "Company") as of December 31, 2017 and 2016, the related consolidated statements of comprehensive loss, stockholders' equity, and cash flows for the years then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Explanatory Paragraph - Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has earned minimal revenue since inception through December 31, 2017 and has incurred significant losses from operations since inception. In addition, the Company's operations have been funded with initial capital contributions and proceeds from the sale of equity securities and debt. These events and conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

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 in accordance with the standards of the PCAOB. 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 in accordance with the standards of the PCAOB.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Crowe Horwath LLP

We have served as the Company's auditor since 2015.

Sherman Oaks, California

February 27, 2018

RESONANT INC.

Consolidated Balance Sheets

	December 31, 2016	December 31, 2017
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	$ 5,084,000	$ 19,524,000
Accounts receivable	56,000	50,000
Prepaid expenses and other current assets	160,000	536,000
Restricted cash	—	100,000
Investment held-to-maturity	4,747,000	—
TOTAL CURRENT ASSETS	10,047,000	20,210,000
PROPERTY AND EQUIPMENT		
Fixed assets	2,269,000	3,212,000
Less: Accumulated depreciation and amortization	(1,275,000)	(1,858,000)
PROPERTY AND EQUIPMENT, NET	994,000	1,354,000
NONCURRENT ASSETS		
Intangible assets, net	1,253,000	1,353,000
Restricted cash	100,000	—
Goodwill	789,000	824,000
Other assets	16,000	19,000
TOTAL NONCURRENT ASSETS	2,158,000	2,196,000
TOTAL ASSETS	$ 13,199,000	$ 23,760,000
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES		
Accounts payable	$ 905,000	$ 708,000
Accrued expenses	35,000	314,000
Accrued salaries and payroll related expenses	1,765,000	1,936,000
Deferred revenue, current	279,000	143,000
Deferred rent, current	20,000	—
TOTAL CURRENT LIABILITIES	3,004,000	3,101,000
LONG-TERM LIABILITIES		
Deferred revenue	46,000	—
Deferred rent	—	10,000
Deferred income taxes	16,000	1,000
TOTAL LIABILITIES	3,066,000	3,112,000
Commitments and contingencies (Note 9)		
STOCKHOLDERS' EQUITY		
Common stock, $0.001 par value, 47,000,000 authorized and 12,468,647 issued and outstanding as of December 31, 2016, and 19,511,276 issued and outstanding as of December 31, 2017	12,000	20,000
Preferred stock, $0.001 par value, 3,000,000 authorized and none outstanding as of December 31, 2016 and 2017	—	—
Additional paid-in capital	56,331,000	88,447,000
Accumulated other comprehensive loss	(51,000)	(7,000)
Accumulated deficit	(46,159,000)	(67,812,000)
TOTAL STOCKHOLDERS' EQUITY	10,133,000	20,648,000
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 13,199,000	$ 23,760,000

See Notes to Consolidated Financial Statements

RESONANT INC.

Consolidated Statements of Comprehensive Loss

	Year Ended December 31, 2016	Year Ended December 31, 2017
REVENUES	$ 302,000	$ 653,000
OPERATING EXPENSES		
Research and development	6,895,000	10,045,000
General and administrative	8,697,000	9,644,000
TOTAL OPERATING EXPENSES	15,592,000	19,689,000
OPERATING LOSS	(15,290,000)	(19,036,000)
OTHER INCOME (EXPENSE)		
Interest and investment income	22,000	67,000
Warrant inducement expense	—	(2,688,000)
Other expense	(1,000)	(10,000)
TOTAL OTHER INCOME (EXPENSE)	21,000	(2,631,000)
LOSS BEFORE INCOME TAXES	(15,269,000)	(21,667,000)
Benefit from income taxes	(22,000)	(14,000)
NET LOSS	$ (15,247,000)	$ (21,653,000)
Foreign currency translation adjustment, net of tax	$ (51,000)	$ 44,000
COMPREHENSIVE LOSS	$ (15,298,000)	$ (21,609,000)
NET LOSS PER SHARE - BASIC AND DILUTED	$ (1.57)	$ (1.44)
Weighted average shares outstanding — basic and diluted	**9,691,115**	**15,015,446**

See Notes to Consolidated Financial Statements

RESONANT INC.
Consolidated Statements of Stockholders' Equity

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
Balance, January 1, 2016	7,241,949	$ 7,000	$ 37,373,000	$ (30,912,000)	$ —	$ 6,468,000
Issuance of common stock for compensation	262,201	—	—	—	—	—
Common stock issued to consultants for services	8,549	—	17,000	—	—	17,000
Stock-based compensation	—	—	2,323,000	—	—	2,323,000
Sales of common stock, net of offering costs	4,711,880	5,000	15,793,000	—	—	15,798,000
Issuance of common stock in the acquisition of business assets	125,000	—	545,000	—	—	545,000
Exercise of warrants, cashless	21,068	—	—	—	—	—
Exercise of warrants for cash	98,000	—	280,000	—	—	280,000
Net loss	—	—	—	(15,247,000)	—	(15,247,000)
Foreign currency translation adjustments	—	—	—	—	(51,000)	(51,000)
Balance, December 31, 2016	12,468,647	12,000	56,331,000	(46,159,000)	(51,000)	10,133,000
Issuance of common stock for compensation	649,359	1,000	(1,000)	—	—	—
Stock-based compensation	—	—	4,136,000	—	—	4,136,000
Sales of common stock, net of offering costs	3,603,817	4,000	15,946,000	—	—	15,950,000
Exercise of warrants, cashless	147,847	—	—	—	—	—
Exercise of warrants for cash	2,608,678	3,000	11,957,000	—	—	11,960,000
Exercise of stock options, cashless	3,758	—	—	—	—	—
Exercise of stock options	29,170	—	78,000	—	—	78,000
Net loss	—	—	—	(21,653,000)	—	(21,653,000)
Foreign currency translation adjustments	—	—	—	—	44,000	44,000
Balance, December 31, 2017	19,511,276	$20,000	$ 88,447,000	$ (67,812,000)	$ (7,000)	$ 20,648,000

See Notes to Consolidated Financial Statements

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RESONANT INC.
Consolidated Statements of Cash Flows

	Year Ended December 31, 2016	Year Ended December 31, 2017
CASH FLOWS FROM OPERATING ACTIVITIES		
Net loss	$ (15,247,000)	$ (21,653,000)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	694,000	721,000
Deferred tax benefit	(23,000)	(14,000)
Stock-based compensation	2,659,000	4,121,000
Non-cash warrant inducement expense	—	2,688,000
Non-cash investment income	(1,000)	—
Non-cash patent write-off	19,000	—
Non-cash loss on disposal of assets	1,000	2,000
Changes in assets and liabilities, net of effects of acquisition:		
Accounts receivable	(19,000)	6,000
Prepaids and other current assets	(8,000)	(376,000)
Other assets	(1,000)	(3,000)
Accounts payable	56,000	(143,000)
Accrued expenses	(34,000)	163,000
Accrued salaries and payroll related expenses	980,000	208,000
Deferred revenue	299,000	(184,000)
Deferred rent	(34,000)	(10,000)
Net cash used in operating activities	(10,659,000)	(14,474,000)
CASH FLOWS FROM INVESTING ACTIVITIES		
Proceeds from sale of fixed assets	—	7,000
Purchases of property and equipment	(400,000)	(815,000)
Expenditures for patents and domain names	(177,000)	(332,000)
Payment for acquisition of business assets, net of acquired cash	(513,000)	—
Redemption of investments held-to-maturity	10,509,000	4,747,000
Purchase of investments held-to-maturity	(12,249,000)	—
Net cash provided by (used in) investing activities	(2,830,000)	3,607,000
CASH FLOWS FROM FINANCING ACTIVITIES		
Net proceeds from the sale of common stock from private placement offerings	5,177,000	15,950,000
Net proceeds from the sale of common stock from underwritten public offering	10,621,000	—
Proceeds from exercise of warrants	280,000	9,272,000
Proceeds from exercise of stock options	—	78,000
Net cash provided by financing activities	16,078,000	25,300,000
Effects of currency translation on cash and cash equivalents	(6,000)	7,000
NET INCREASE IN CASH AND CASH EQUIVALENTS	2,583,000	14,440,000
CASH AND CASH EQUIVALENTS — Beginning of year	2,501,000	5,084,000
CASH AND CASH EQUIVALENTS — End of year	$ 5,084,000	$ 19,524,000
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION		
Taxes	$ 1,000	$ 1,000
SUPPLEMENTAL DISCLOSURE OF NON-CASH ACTIVITIES		
Issuance of common stock in settlement of liability	$ 110,000	$ 119,000
Stock options issued in settlement of liability	$ —	$ 332,000
Issuance of common stock in the acquisition of business assets	$ 545,000	$ —
Property and equipment included in accounts payable	$ 191,000	$ 245,000
Property and equipment included in accrued liabilities	$ —	$ 95,000
Patents included in accounts payable	$ 117,000	$ 9,000

See Notes to Consolidated Financial Statements

RESONANT INC.
Notes to Consolidated Financial Statements

NOTE 1—ORGANIZATION AND DESCRIPTION OF BUSINESS

Overview

Resonant Inc. is a late-stage development company located in Goleta, California. We were incorporated in Delaware in January 2012 as a wholly owned subsidiary of Superconductor Technologies Inc., or STI, but had not conducted any operations through June 16, 2013. Resonant LLC, a limited liability company, was formed in California in May 2012. We commenced business on July 6, 2012 with initial contributions from our founders and STI. We changed our form of ownership from a limited liability company to a corporation in an exchange transaction in June 2013. We are the successor of Resonant LLC. We completed our initial public offering, or IPO, on May 29, 2014. We acquired all of the issued and outstanding capital stock of GVR Trade S.A, or GVR, on July 6, 2016. GVR is a wholly owned subsidiary of Resonant Inc.

We have created an innovative software, intellectual property, or IP, and services platform that has the ability to increase designer efficiency, reduce the time to market and lower unit costs in the designs of filters for radio frequency, or RF, front-ends for the mobile device industry. The RF front-end, or RFFE, is the circuitry in a mobile device responsible for analog signal processing and is located between the device's antenna and its digital circuitry. The software platform we are developing is based on fundamentally new technology that we call Infinite Synthesized Networks®, or ISN®, to configure and connect resonators, the building blocks of RF filters. Filters are a critical component of the RF front-end used to select desired radio frequency signals and reject unwanted signals. Our ISN® platform allows us to develop unique, custom designs that address the increasing complexity of the RFFE due to carrier aggregation (the combining of multiple frequencies into a single data stream to increase throughput through higher data rates), or CA, by both reducing the size of the filter and improving performance. Our goal is to utilize our ISN® platform to support our customers in reducing their time to develop complex filter and module designs, to access new classes of filter designs, and to do it more cost effectively. Additionally, our ISN® platform has allowed us to expand our customer focus beyond just filter manufacturers by enabling a new class of customer - fabless filter manufacturers. These companies do not have their own internal filter fabrication facility, or Fab, and typically already would be supplying other products in the RFFE to the OEMs and as a result do not require a protracted, new vendor, qualification process in order to supply parts. It is through our existing customer relationships that we are able to facilitate these third-party Fab relationships, that leverage our ISN®tools to deliver cutting edge filter designs to these fabless filter customers.

We are commercializing our technology through the creation of filter designs that address the problems in the high growth RFFE industry created by the growing number of frequency bands in mobile devices. The worldwide adoption of Long Term Evolution, or LTE, as the global standard, and the use of mobile devices to access the Internet, has resulted in massive proliferation of frequency bands which, when combined with CA for higher data rates and multiple input multiple output, or MIMO, has resulted in an ever-increasing number and complexity of filters in the RFFE. We have developed and continue to expand a series of single-band designs for frequency bands presently dominated by larger and more expensive bulk acoustic wave, or BAW, filters. We are also developing multiplexer filter designs for two or more bands to address the CA requirements of our customers. We are using our ISN® platform to efficiently integrate these designs into RF modules for our module customers. Finally, we are developing unique filter designs, enabled by ISN®, to replace multiple filters and associated componentry for many bands, with higher performance. Currently, we are leveraging ISN® to develop these designs targeted for either the Surface Acoustic Wave (SAW) or Temperature Compensated, Surface Acoustic Wave (TC-SAW) manufacturing processes. In order to succeed, we must convince RFFE suppliers that our filter designs can significantly reduce the size and cost of their products.

We believe licensing our designs is the most direct and effective means of validating our ISN® platform and related IP libraries to address this rapidly growing market. Our target customers make part or all of the RFFE. We intend to retain ownership of our designs, and we expect to be compensated through license fees and royalties based on sales of RFFE filters that incorporate our designs. We currently do not intend to manufacture or sell any physical products or operate as a contract design company developing designs for a fee.

Capital Resources and Liquidity

We are using the net proceeds from the sales of our common stock for product development to commercialize our technology, research and development, the development of our patent strategy and expansion of our patent portfolio, as well as for working capital and other general corporate purposes. Our costs include employee salaries and benefits, compensation paid to consultants, capital costs for research and other equipment, costs associated with development activities including travel and administration, legal expenses, sales and marketing costs, general and administrative expenses, and other costs associated with a late-stage development, publicly-traded technology company. However, this is highly dependent on the nature of our development efforts and our success in commercialization. We continue to add employees for research and development, as well as general and administrative functions, to support our efforts. Additionally, we continue to incur consulting expenses related to technology development and other efforts as well as legal and related expenses to protect our intellectual property.

The amounts that we actually spend for any specific purpose may vary significantly and will depend on a number of factors including, but not limited to, our expected cash resources, the pace of progress of our commercialization and development efforts, actual needs with respect to product testing, research and development, market conditions, and changes in or revisions to our marketing strategies. In addition, we may invest in complementary products, technologies or businesses.

We have earned minimal revenues since inception, and our operations have been funded with initial capital contributions and proceeds from the sale of equity securities and debt. At December 31, 2016 and December 31, 2017, we had incurred accumulated losses totaling $46.2 million and $67.8 million, respectively. The losses are primarily the result of research and development costs associated with commercializing our technology, combined with start-up, financing and public company costs. We expect to continue to incur substantial costs for commercialization of our technology on a continuous basis because our business model involves developing and licensing custom filter designs.

Our consolidated financial statements account for the continuation of our business as a going concern. We are subject to the risks and uncertainties associated with a new business. Our principal source of liquidity as of December 31, 2017 consists of existing cash and cash equivalents of $19.5 million. During the year ended December 31, 2017, we used $15.6 million of cash and investments for operating activities, the purchase of property and equipment, and expenditures for patents. Due to these conditions, along with planned growth, substantial doubt exists as to our ability to continue as a going concern. After evaluation of these conditions, we believe our current resources will provide sufficient funding for planned operations into the second half of 2018. If necessary, we will seek to raise additional capital from the sale of equity securities or the incurrence of indebtedness to allow us to continue operations. There can be no assurance that additional financing will be available to us on acceptable terms, or at all. Additionally, if we issue additional equity securities to raise funds, whether to existing investors or others, the ownership percentage of our existing stockholders would be reduced. New investors may demand rights, preferences or privileges senior to those of existing holders of common stock. Additionally, we may be limited as to the amount of funds we can raise pursuant to SEC rules and the continued listing requirements of NASDAQ. If we cannot raise needed funds, we might be forced to make substantial reductions in our operating expenses, which could adversely affect our ability to implement our business plan and ultimately our viability as a company. These consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classification of liabilities that might result from this uncertainty.

We have a Form S-3 universal shelf registration statement on file with the SEC. The universal shelf registration statement on Form S-3 permits us to sell, in one or more public offerings, shares of our common stock, shares of preferred stock or debt securities, or any combination of such securities and warrants to purchase securities, for proceeds in an aggregate amount of up to $35.0 million, subject to limitations on the amount of securities we may sell in any twelve-month period. As of December 31, 2017, we have raised a total of $11.5 million of gross proceeds from the sale of 2,715,000 shares of our common stock, leaving approximately $23.5 million of securities available for issuance pursuant to the Form S-3. The Form S-3 will expire in May 2019.

NOTE 2—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Use of Estimates—The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States, or U.S. GAAP. In the opinion of management, all adjustments (consisting of normal accruals) considered for a fair presentation have been included. Significant estimates made in preparing these financial statements include (a) assumptions to calculate the fair values of financial instruments, warrants and equity instruments and other liabilities and the deferred tax asset valuation allowance and (b) the useful lives for depreciable and amortizable assets. Actual results could differ from those estimates. In the opinion of management, all adjustments, including normal recurring accruals considered necessary for a fair presentation, have been included.

Consolidation - The accompanying financial statements include the accounts of the Company and its wholly-owned subsidiary, GVR Trade, S.A. All significant intercompany balances and transactions have been eliminated.

Cash and Cash Equivalents—We consider all liquid instruments purchased with a maturity of three months or less to be cash equivalents.

Concentration of Credit Risk—We maintain checking accounts at one U.S. financial institution. The U.S. bank accounts are insured by the Federal Deposit Insurance Corporation (FDIC) for up to $250,000 per account owner. GVR Trade S.A., our wholly owned Swiss-based subsidiary maintains checking accounts at one major national financial institution. Additionally, we maintain a checking account with a very minimal balance at one bank in South Korea, which is used to fund payroll and rent in South Korea. Management believes we are not exposed to significant credit risk due to the financial position of the depository institutions in which our deposits are held.

Restricted Cash—Restricted cash at December 31, 2016 and December 31, 2017 represents cash held within a certificate of deposit with a financial institution, which serves as collateral for our corporate credit cards. The restriction on the cash will lapse in conjunction with the expiration of the use of the corporate credit cards.

Investments—Securities held-to-maturity: Management determines the appropriate classification of debt securities at the time of purchase and reevaluates such designation as of each balance sheet date. Investment/debt securities are classified as held-to-maturity when we have the positive intent and ability to hold the securities to maturity. Held-to-maturity securities are stated at amortized cost, adjusted for amortization of premiums and accretion of discounts to maturity computed under the effective interest method. Such amortization is included in investment income. Interest on securities classified as held-to-maturity is included in investment income.

When the fair value of an investment instrument classified as held-to-maturity is less than its amortized cost, management assesses whether or not: (i) we have the intent to sell the instrument or (ii) it is more likely than not that we will be required to sell the instrument before its anticipated recovery. If either of these conditions is met, we must recognize an other-than-temporary impairment for the difference between the instrument's amortized cost basis and its fair value, and include such amounts in net securities gains (losses).

For investment instruments that do not meet the above criteria and are not expected to be recovered at the amortized cost basis, the instrument is considered other-than-temporarily impaired. For these instruments, we separate the total impairment into the credit loss component and the amount of the loss related to other factors. In order to determine the amount of the credit loss, we calculate the recovery value by performing a discounted cash flow analysis based on the current cash flows and future cash flows management expects to recover. The discount rate is the effective interest rate implicit in the underlying instrument. The amount of the total other-than-temporary impairment related to credit loss is recognized in earnings and is included in net securities gains (losses). The amount of the total other-than-temporary impairment related to other factors is recognized in other comprehensive income. For investment instruments that have other-than-temporary impairment recognized through earnings, if through subsequent evaluation there is a significant increase in the cash flow expected, the difference between the amortized cost basis and the cash flows expected to be collected is accreted as interest income.

During 2016, we invested in corporate paper and federally insured certificates of deposit that we have classified as held-to-maturity. As of December 31, 2016, the amortized cost value was $4.7 million with an unrealized loss of $2,000 and a fair value of $4.7 million. The investments consisted of $4.0 million of corporate paper, of which $3.0 million matured in January of 2017 and $1.0 million matured in February of 2017, and $747,000 of certificates of deposit which matured in increments of $249,000 between January and March of 2017. We did not recognize an other-than-temporary impairment gain or loss or a comprehensive gain or loss as of December 31, 2016.

During 2017, we invested in commercial papers and certificates of deposit that were classified as investments held-to-maturity. Additionally, we maintained money market fund balances that were classified as cash and cash equivalents. As of December 31, 2017, all of our investments held-to-maturity have matured and we have no investments classified as held-to-maturity.

We recorded investment income of $22,000 and $67,000 for the years ended December 31, 2016 and 2017, respectively, associated with our cash and investment accounts.

Fair Value of Financial Instruments—We measure certain financial assets and liabilities at fair value based on the exchange price that would be received for an asset or paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. The carrying amounts of our financial instruments, including cash equivalents, restricted cash, investments held-to-maturity, accounts payable, and accrued liabilities, approximate fair value due to their short maturities.

Accounts Receivable—Trade accounts receivable are stated net of allowances for doubtful accounts. Management estimates the allowance for doubtful accounts based on review and analysis of specific customer balances that may not be collectible, customer payment history and any other customer-specific information that may impact collectability of the receivable. Accounts are considered for write-off when they become past due and when it is determined that the probability of collection is remote. The was no allowance for doubtful accounts at December 31, 2016 and December 31, 2017.

Property and Equipment—Property and equipment consists of leasehold improvements associated with our corporate offices, software purchased during the normal course of business, equipment and office furniture and fixtures, all of which are recorded at cost. During 2016, other property and equipment were acquired as part of the purchase of GVR and were initially recorded at their fair value. Depreciation and amortization is recorded using the straight-line method over the respective useful lives of the assets ranging from three to five years. Leasehold improvements are amortized over the shorter of lease term or useful life. Long-lived assets are reviewed for impairment whenever events or circumstances indicate that the carrying amount of these assets may not be recoverable.

Intangible Assets, net—Intangible assets are recorded at cost and amortized over the useful life. In the case of business combinations, intangible assets are recorded at fair value. At December 31, 2016 and December 31, 2017, intangible assets, net, includes patents, domain name and other intangibles purchased from GVR, including customer relationships, technology and trademark. Intangible assets are reviewed for impairment whenever events or circumstances indicate that the carrying amount of these assets may not be recoverable.

Goodwill—At December 31, 2017, goodwill represents the difference between the price paid to acquire GVR Trade and the fair value of the assets acquired, net of assumed liabilities. We review goodwill for impairment annually and whenever events or circumstances indicate that the carrying amount of these assets may not be recoverable.

Revenue Recognition—Revenue consists primarily of fees received in connection with filter design projects with customers. Contracts may involve upfront non-refundable fees, intended to support our initial engineering product development efforts, as well as milestone payments based upon the successful completion of certain deliverables. In relation to the upfront non-refundable fees, we recognize revenue in accordance with the Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 605, *Revenue Recognition.* We recognize revenue as the services are performed over the initial engineering filter design development period and when all of the following criteria have been met: persuasive evidence of an arrangement exists, services have been rendered, collection of the revenue is reasonably assured, and the fees are fixed or determinable. We record the expenses related to these projects in the periods incurred and they are generally included in research and development expense.

In addition to the upfront non-refundable payments, the filter design projects include certain milestone payments upon successful filter design or a design stage completion. These filter design projects are associated with complex technology development, and as such we do not have certainty about our ability to achieve the program milestones. Achievement of the milestone is generally dependent on the filter design specifications and the milestone typically needs to be accepted by the customer. The payment associated with achieving the milestone is generally commensurate with our effort or the value of the deliverable and is generally non-refundable. We record revenue associated with the milestone payments in accordance with ASC Topic 605-28, *Milestone Method,* whereby we record revenue upon successful completion of the related milestone and when collection of the revenue is reasonably assured. We record the expenses related to these projects, generally included in research and development expense, in the periods incurred.

During the years ended December 31, 2016 and 2017, we recorded revenue of $302,000 and $653,000, respectively, primarily related to filter design projects. As of December 31, 2017, we have recorded $143,000 in deferred revenue related primarily to our filter design development projects.

Research and Development—Costs and expenses that can be clearly identified as research and development are charged to expense as incurred in accordance with ASC Topic 730-10, *Research and Development*.

Operating Leases—We lease office space and research facilities under operating leases. Certain lease agreements contain free or escalating rent payment provisions. We recognize rent expense under such leases on a straight-line basis over the term of the lease. Lease renewal periods are considered on a lease-by-lease basis in determining the lease term.

Stock-Based Compensation—We account for employee stock options in accordance with ASC Topic 718, *Compensation-Stock Compensation.* For stock options issued to employees and directors we use the Black-Scholes option valuation model for estimating fair value at the date of grant. For stock options issued for services rendered by non-employees, we recognize compensation expense in accordance with the requirements of ASC Topic 505-50, *Equity*, or ASC 505-50, as amended. Non-employee option grants that do not vest immediately upon grant are recorded as an expense over the vesting period. At the end of each financial reporting period prior to performance, the value of these options, as calculated using the Black-Scholes option valuation model, is determined, and compensation expense recognized or recovered during the period is adjusted accordingly. Since the fair market value of options granted to non-employees is subject to change in the future, the amount of the future compensation expense is subject to adjustment until the common stock options or warrants are fully vested.

We account for restricted stock units issued to employees at fair value, based on the market price of our stock on the date of grant, net of estimated forfeitures. Compensation expense is recognized for the portion of the award that is ultimately expected to vest over the period during which the recipient renders the required services to the Company generally using the straight-line single option method. The fair value of non-employee restricted stock units awarded are remeasured as the awards vest, and the resulting increase or decrease in fair value, if any, is recognized as an increase or decrease to compensation expense in the period the related services are rendered.

In the case of award modifications, we account for the modification by recognizing the effect of the modification in the period the award was modified.

Stock-based compensation expense is included in research and development expenses and general and administrative expenses.

Earnings Per Share, or EPS—EPS is computed in accordance with ASC Topic 260, *Earnings per Share*, and is calculated using the weighted average number of common shares outstanding during each period. Diluted EPS assumes the conversion, exercise or issuance of all potential common stock equivalents unless the effect is to reduce a loss or increase the income per share. Potential common shares consist of the incremental common shares issuable upon the exercise of stock options (using the treasury stock method), the exercise of warrants (using the if-converted method) and the vesting of restricted stock unit awards.

The following table presents the number of shares excluded from the calculation of diluted net loss per share attributable to common stockholders for the periods below:

	Year Ended December 31, 2016	**Year Ended December 31, 2017**
Common stock warrants	2,915,559	3,730,255
Common stock options	801,690	1,082,490
Non-vested restricted stock unit awards	1,455,558	1,476,858
Total shares excluded from net loss per share attributable to common stockholders	5,172,807	6,289,603

Income Taxes—We account for income taxes in accordance with ASC Topic 740, *Income Taxes*, or ASC 740, which requires the recognition of deferred tax assets and liabilities for the future consequences of events that have been recognized in our condensed consolidated financial statements or tax returns. The measurement of the deferred items is based on enacted tax laws. In the event the future consequences of differences between financial reporting bases and the tax bases of our assets and liabilities result in a deferred tax asset, ASC 740 requires an evaluation of the probability of being able to realize the future benefits indicated by such asset. A valuation allowance related to a deferred tax asset is recorded when it is more likely than not that some portion or the entire deferred tax asset will not be realized. As part of the process of preparing our consolidated financial statements, we are required to estimate our income tax expense in each of the jurisdictions in which we operate. We also assess temporary differences resulting from differing treatment of items for tax and accounting differences. We record a valuation allowance to reduce the deferred tax assets to the amount of future tax benefit that is more likely than not to be realized. For the period when we were organized as a limited liability company, we were treated as a partnership for federal and state income tax purposes under the entity classification domestic default rules. As of December 31, 2016 and December 31, 2017, no liability for unrecognized tax benefits was required to be reported. We recognize interest and penalties related to income tax matters in income taxes, and there were none for the years ended December 31, 2016 and December 31, 2017, respectively.

We have filed, or are in the process of filing, tax returns that are subject to audit by the respective tax authorities. Although the ultimate outcome would be unknown, we believe that any adjustments that may result from tax return audits are not likely to have a material, adverse effect on our consolidated results of operations, financial position or cash flows.

Reclassifications—Certain amounts in the consolidated statement of operations for the year ended December 31, 2016 have been reclassified to conform to the current year presentation.

Business Combinations—We record business combinations using the acquisition method of accounting and, accordingly, allocate the fair value of purchase consideration to the assets acquired and liabilities assumed based on their fair values at the acquisition date. The excess of the fair value of the purchase consideration over the fair value of the assets acquired and liabilities assumed is recorded as goodwill. The results of operations of the business acquired are included in our consolidated results of operations beginning on the date of acquisition.

Foreign Currency Translation—The Swiss Franc has been determined to be the functional currency for the net assets of our Swiss-based subsidiary. We translate the assets and liabilities to U.S. dollars at each reporting period using exchange rates in effect at the balance sheet date and record the effects of the foreign currency translation in accumulated other comprehensive income (loss) in shareholders' equity. We translate the income and expenses to U.S. dollars at each reporting period using the average exchange rate in effect for the period and record the effects of the foreign currency translation as other comprehensive income (loss) in the consolidated statements of comprehensive loss. Gains and losses resulting from foreign currency transactions are included in net loss in the consolidated statements of comprehensive loss.

Recent Accounting Pronouncements

Revenue from Contracts with Customers—In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*. The new revenue recognition standard provides a five-step analysis of transactions to determine when and how revenue is recognized. The core principle is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In August 2015, the FASB issued ASU No. 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which defers the effective date of ASU No. 2014-09 for all entities by one year to annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. This ASU shall be applied either retrospectively to each period presented or as a cumulative-effect adjustment as of the date of adoption. Early adoption is permitted but not before the annual periods beginning after December 15, 2016, including interim periods within that reporting period. In March 2016, the FASB issued ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606), Principal versus Agent Considerations (Reporting Revenue Gross versus Net)*. This ASU provides further guidance surrounding the recognition of revenue as well as guidance involving principal versus agent considerations. The effective date of this ASU is the same as ASU 2014-09. In April 2016, the FASB issued ASU No. 2016-10, *Revenue from Contracts with Customers (Topic 606), Identifying Performance Obligations and Licensing*. This amendment provides clarification surrounding the identification of performance obligations and offers licensing implementation guidance. The effective date of this ASU is the same as ASU 2014-09. In May 2016, the FASB issued ASU No. 2016-12, *Revenue from Contracts with Customers (Topic 606), Narrow-Scope Improvements and Practical Expedients,* which provides further guidance surrounding certain aspects of ASU 2014-09. The effective date of this ASU is the same as ASU 2014-09. The new standards became effective for us on January 1, 2018 and we adopted at that time using the modified retrospective approach with a cumulative adjustment to reflect the initial impact recognized at the date of adoption. We believe the impact is not significant due to the relatively small number of contracts and nature of our contracts, which are primarily related to design development projects where the revenue is recognized over time under both the prior guidance and the new revenue recognition standard.

We believe the adoption of the new standard will result in an increase to contract assets and a corresponding increase to retained earnings. The impact of the adoption is primarily related to the recognition of income from milestones within our contracts. Up until January 1, 2018, we recognized income related to milestones at the time when the milestone was achieved. Under the new guidance we are required to estimate the likelihood of such achievement, and recognize the income over the period of achievement.

Leases—In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, a comprehensive new leases standard that amends various aspects of existing accounting guidance for leases. It will require recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. The main difference between previous U.S. GAAP and the amended standard is the recognition of lease assets and lease liabilities by lessees on the balance sheet for those leases classified as operating leases under previous U.S. GAAP. The accounting applied by a lessor is largely unchanged from that applied under previous U.S. GAAP. As a result, we will have to recognize a liability to make lease payments (the lease liability) and a right-of-use asset representing our right to use the underlying asset for the lease term on the balance sheet. The guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early adoption is permitted. We are currently reviewing the two leases we have and are evaluating the effects of the new guidance on our consolidated financial statements. We do not expect it to have a material impact on our consolidated financial statements.

Intangibles-Goodwill and Other—In January 2017, the FASB issued ASU No. 2017-04, *Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*, which simplifies the accounting for goodwill impairments by eliminating step 2 from the goodwill impairment test. The amended guidance will become effective for us commencing in the first quarter of fiscal 2019. We are currently evaluating the impact of this new standard.

Compensation-Stock Compensation—In May 2017, the FASB issued ASU No. 2017-09, *Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting*, which provides clarity over the accounting for a change to the terms or conditions of a share-based payment award. The amendments in the update are effective for all entities for annual periods, and interim periods within those annual periods, beginning after December 15, 2017. The amendments in this update should be applied prospectively to an award modification on or after the adoption date. This guidance became effective for us on January 1, 2018 and will be applied to all future share-based award modifications.

NOTE 3—INTANGIBLE ASSETS AND GOODWILL

Intangible assets include patents, domain name and other intangibles purchased from GVR, including customer relationships, technology and a trademark. Certain patents were acquired from STI as a result of an asset contribution and were recorded at their carryover basis. The fair value of the patents remained substantially the same as their carrying value at the exchange date. In addition, we acquired other patents and the domain name www.resonant.com through the normal course of business. Intangibles acquired as part of the purchase of GVR were initially recorded at their fair value. Issued patents are amortized over their approximate useful life of 17 years, or 20 years in the case of new patents, once they are approved by their respective regulatory agency. For the patents acquired from STI, we are amortizing them over the remaining useful life of 1 to 12 years as of December 31, 2017. The domain name is amortized over the approximate useful life of 10 years. The other intangibles acquired from GVR are amortized over their useful life of three to five years. Intangible assets consisted of the following at December 31, 2016 and 2017:

	2016	2017
Patents	$ 1,132,000	$ 1,349,000
Domain Name	22,000	22,000
Client Base (1)	137,000	143,000
Trademark (1)	17,000	17,000
Backlog (1)	12,000	13,000
Technology	84,000	77,000
	1,404,000	1,621,000
Less: accumulated amortization	(151,000)	(268,000)
Net intangible assets	$ 1,253,000	$ 1,353,000

(1) Includes the impact of foreign currency translation. The total impact at December 31, 2016 was $5,000 and the total impact at December 31, 2017 was $2,000.

During the year ended December 31, 2016 and 2017, we wrote-off $19,000 and $8,000, respectively, of patents we are no longer pursuing. The write-offs are included in research and development expense.

Amortization of intangible assets was $89,000 and $126,000 for the years ended December 31, 2016 and 2017, respectively. The following table summarizes the estimated amortization expense relating to the intangible assets as of December 31, 2017:

Years ending December 31,		
2018	$	130,000
2019		103,000
2020		76,000
2021		66,000
2022		56,000
2023 and thereafter		418,000
Total amortization expense	$	849,000

Goodwill represents the excess of the purchase price over the fair value of the net assets acquired from GVR Trade (see Note 5). Goodwill is not amortized, but is subject to impairment tests on at least an annual basis and whenever circumstances suggest that goodwill may be impaired.

		Goodwill
Balance at January 1, 2016	$	—
Acquisition of GVR		824,000
Effect of currency translation		(35,000)
Balance at December 31, 2016	$	789,000
Effect of currency translation	$	35,000
Balance at December 31, 2017	$	824,000

NOTE 4—PROPERTY AND EQUIPMENT, NET

Property and equipment, net consists of the following:

		2016		2017
Cost:				
Computers, peripheral and scientific equipment	$	618,000	$	1,016,000
Software		967,000		1,367,000
Leasehold Improvements		470,000		502,000
Office furniture and equipment		214,000		327,000
		2,269,000		3,212,000
Less accumulated depreciation and amortization		(1,275,000)		(1,858,000)
Property and equipment, net	$	994,000	$	1,354,000

Depreciation expense for the years ended December 31, 2016 and December 31, 2017 was $604,000 and $594,000, respectively. Disposals of property were $1,000 and $21,000 for the years ended December 31, 2016 and December 31, 2017, respectively.

NOTE 5—ACQUISITION OF GVR TRADE S.A.

On July 6, 2016, we acquired all of the issued and outstanding capital stock of GVR Trade S.A. The purchase price, consisting of $661,000 in cash and 125,000 shares of our common stock with a fair value of $545,000, based on a per share price of $4.36 as of the date of acquisition, was approximately $1.2 million. At the time of acquisition, we incurred approximately $92,000 of acquisition related expenses, which were included in general and administrative expenses for the year ended December 31, 2016. GVR is a wholly owned direct subsidiary of Resonant.

As of the acquisition date, we recorded goodwill of approximately $824,000, which represented the excess of the purchase price over the fair value of the assets acquired. The fair value for the assets acquired and liabilities assumed were based upon independent calculations and valuations. We review goodwill for impairment annually and whenever events or circumstances indicate that the carrying amount of the assets may not be recoverable.

The purchase price was allocated based on the fair values of assets and liabilities as follows:

Assets acquired		
Cash and cash equivalents	$	148,000
Other current assets		52,000
Property and equipment		23,000
Intangible assets		
Customer relationships		143,000
Developed technology		88,000
Trademarks and other		31,000
Total assets acquired		485,000
Liabilities assumed		
Current liabilities		(35,000)
Deferred tax liability		(41,000)
Deferred revenue, current		(27,000)
Total liabilities assumed		(103,000)
Net value of assets acquired and liabilities assumed		382,000
Total purchase price		1,206,000
Excess of purchase price over fair value of assets acquired and liabilities assumed - recorded as Goodwill	$	824,000

The acquisition was not material to our consolidated financial statements and we have included the financial results of the business acquisition in our consolidated financial statements from the date of acquisition. Our consolidated statements of comprehensive loss include $127,000 and $58,000 of net loss of GVR for the year ended December 31, 2016 and 2017, respectively.

NOTE 6—WARRANTS

From time to time, we have issued warrants to purchase shares of common stock. These warrants have been issued in connection with financing transactions and for consulting services. Our warrants are subject to standard anti-dilution provisions applicable to shares of our common stock.

Bridge Warrants

In connection with and as an inducement to make the bridge loans in January and March 2013, Resonant LLC issued to each of our three founders 5-year warrants to purchase Class B units of Resonant LLC at an exercise price of $0.40 per unit, which we refer to as the Bridge Warrants. The Bridge Warrants were issued in two tranches, at the same time the bridge loan was funded, with each founder receiving warrants for 20,833 Class B units on each of January 31, 2013 (for a total of 62,499 Class B units) and March 19, 2013 (for a total of 62,499 Class B units). The founders paid an aggregate of $1,000 in cash for the Bridge Warrants.

On June 17, 2013, in connection with our acquisition of all of the outstanding membership interests of Resonant LLC in an exchange transaction, the founders exchanged their Bridge Warrants to purchase an aggregate of 124,998 Class B units of Resonant LLC for Bridge Warrants to purchase an aggregate of 249,999 shares of our common stock at an exercise price of $0.20 per share. All other terms of the Bridge Warrants remained the same.

Consulting Warrant, Financing Warrant and Underwriting Warrant

Upon consummation of our Senior Convertible Note financing, for business consulting services provided by MDB Capital Group, LLC, or MDB, we issued to MDB a 7-year warrant to purchase 222,222 shares of our common stock at an exercise price of $0.01 per share, which we refer to as the Consulting Warrant. The Consulting Warrant is exercisable six months after the completion of our initial public offering, or IPO, in 2014 and prior to June 15, 2020.

In addition, for placement agent services provided by MDB in connection with our Senior Convertible Note financing, we issued to MDB a 7-year warrant to purchase shares of our common stock, which we refer to as the Financing Warrant. The Financing Warrant is exercisable six months after the completion of our IPO and prior to June 15, 2020. The Financing Warrant is exercisable for a number of shares of our common stock equal to $700,000 divided by the Financing Warrant's exercise price.

In connection with the closing of our IPO, we also issued a third warrant to MDB related to their role as the sole underwriter for our IPO, which we refer to as the Underwriting Warrant. We issued them a 5-year warrant to purchase 310,500 shares of common stock at an exercise price of $7.50 per share. The warrant was not exercisable until November 24, 2014 (180-days from the date of the underwriting agreement) and expires May 28, 2019.

Investor Relations Warrants

In August 2014 and October 2014, we entered into agreements with our investor relations firm, or IR Firm, and an IR consultant to provide us with investor relations services. Pursuant to the IR Firm agreement, in addition to monthly cash compensation, we issued to the IR Firm a 3-year consulting warrant, or IR Consulting Warrant, for the purchase of 42,000 shares of common stock that became fully vested on July 21, 2015. The IR Consulting Warrant had an exercise price of $8.31 and expired, unexercised, on July 17, 2017.

Pursuant to our agreement with the IR consultant, in addition to monthly cash compensation, we issued to the IR consultant a 4-year consulting warrant, or IR Warrant, for the purchase of 6,000 shares of common stock that became fully vested on September of 2015. The IR Warrant has an exercise price of $6.50 and expires on September 30, 2018.

There was no expense recorded for the years ended December 31, 2016 or 2017 related to the investor relations warrants as they had been fully expensed as of December 31, 2015.

Private Placement Warrants - 2016

In April 2016, we issued warrants to purchase 1,996,880 shares of our common stock at an exercise price of $2.86 in connection with our private placement sale of 1,996,880 shares of common stock. The warrants are exercisable for a period commencing 6 months and ending 36 months after the closing of the financing on April 25, 2016. We also issued to the placement agents in the financing, warrants to purchase an aggregate of 99,844 shares of our common stock at an exercise price of $2.86 for a period commencing 6 months and ending 36 months after the closing. We refer to these warrants as Private Placement Warrants - 2016. We estimated the fair value of the Private Placement Warrants - 2016 at $2,500,000 using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $2.90 per share, time to maturity of 3 years, volatility of 60%, zero expected dividend rate and risk free rate of 0.97%. The allocation of the fair value of these warrants was included in additional paid-in capital on the consolidated balance sheet.

In December 2017, we entered into Warrant Exercise Agreements with certain holders of Private Placement Warrants - 2016 to induce the exercise of 836,780 warrants in full. Pursuant to the agreements, the warrant holders exercised in full the warrants and purchased an aggregate of 836,780 shares of our common stock at an exercise price of $2.86 per share, for an aggregate exercise price of approximately $2.4 million and we paid the warrant holders aggregated inducement fees of approximately $239,000, which resulted in net proceeds to us of $2.2 million. The inducement offer included in the Warrant Exercise Agreements was considered a modification to the warrants upon acceptance by the warrant holders. Upon modification of the warrants we were required to remeasure the warrants. We estimated the fair value of the Private Placement Warrants - 2016 immediately prior to modification at $3.8 million using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $6.96 to $7.42 per share, time to maturity of 1.42 years, volatility of 60%, zero expected dividend rate and risk free rates of 1.70% to 1.74%. We estimated the fair value of the Private Placement Warrants - 2016 upon modification at $3.9 million using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $6.96 to $7.42 per share, time to maturity of 1 day, volatility of 10%, zero expected dividend rate and risk free rates of 1.14% to 1.21%. The change in fair value was $166,000, and when combined with the cash inducement of $239,000, resulted in $73,000 of expense, which was recorded as warrant inducement expense.

Underwriting Warrants - Public Offering 2016

In September 2016, we issued warrants to purchase 135,750 shares of our common stock at an exercise price of $4.25 to the underwriter of our public offering of 2,715,000 shares of common stock. The warrants are exercisable for a 2 year period commencing September 9, 2017. We refer to these warrants as Underwriting Warrants - Public Offering 2016. We estimated the fair value of the Underwriting Warrants -Public Offering 2016 at $475,000 using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $6.54 per share, time to maturity of 3 years, volatility of 60%, zero expected dividend rate and risk free rate of 0.90%. The allocation of the fair value of these warrants was included in additional paid-in capital on the consolidated balance sheet.

Private Placement Warrants - February 2017

In February 2017, we issued warrants to purchase 1,626,898 shares of our common stock at an exercise price of $8.25 in connection with our private placement sale of 1,626,898 shares of common stock. The warrants were exercisable for a period commencing 6 months and ending 30 months after the closing of the financing. We refer to these warrants as Private Placement Warrants - February 2017. We estimated the fair value of the Private Placement Warrants - February 2017 at $2,084,000 using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $4.91 per share, time to maturity of 3 years, volatility of 60%, zero expected dividend rate and risk free rate of 1.50%. The allocation of the fair value of these warrants was included in additional paid-in capital on the consolidated balance sheet.

On December 19, 2017, we entered into a Warrant Exercise Agreement with the holder of Private Placement Warrants - February 2017 to induce the exercise of the 1,626,898 warrants in full. Pursuant to the agreement, the warrant holder exercised in full the warrant and purchased 1,626,898 shares of our common stock at an exercise price of $8.25 per share, for an aggregate exercise price of approximately $13.4 million and we paid the warrant holder an inducement fee of approximately $6.7 million, which resulted in net proceeds to us of $6.7 million. The inducement offer included in the Warrant Exercise Agreement was considered a modification to the warrant upon acceptance by the warrant holder. Upon modification of the warrant we were required to remeasure the warrant. We estimated the fair value of the Private Placement Warrants - February 2017 immediately prior to modification at $4.1 million using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $8.18 per share, time to maturity of 1.67 years, volatility of 60%, zero expected dividend rate and risk free rate of 1.78%. We estimated the fair value of the Private Placement Warrants - February 2017 upon modification at $6.7 million using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $8.18 per share, time to maturity of 1 day, volatility of 10%, zero expected dividend rate and risk free rate of 1.25%. The change in fair value was $4.1 million, and when combined with the cash inducement of $6.7 million, resulted in $2.6 million of expense, which was recorded as warrant inducement expense.

Private Placement Warrants - September 2017

In September and October 2017, we issued warrants to purchase an aggregate of 1,976,919 shares of our common stock at an exercise price of $4.85 in connection with our private placement sale of 1,976,919 shares of common stock. The sale was completed in two tranches with the first tranche, which closed on September 28, 2017, including 1,745,581 warrants, and the second tranche, which closed on October 2, 2017, including 231,338 warrants. The warrants are exercisable for a period commencing 6 months and ending 36 months after the closing of the financing. Collectively, we refer to these warrants as Private Placement Warrants - September 2017. We estimated the total fair value of the Private Placement Warrants - September 2017 at $3.6 million using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $4.49 for the first tranche and $4.69 per share for the second tranche, time to maturity of 3 years, volatility of 60%, zero expected dividend rate and risk free rates of 1.59% for the first tranche and 1.63% for the second tranche. The allocation of the fair value of these warrants was included in additional paid-in capital on the consolidated balance sheet.

Placement Agent Warrants - 2017

In addition to the Private Placement Warrants - September 2017 issued in connection with our private placement sale of 1,976,919 shares of our common stock, we also issued to the placement agent, warrants to purchase a total of 98,846 shares of our common stock at an exercise price of $4.85 per share. Upon closing of the first tranche on September 28, 2017, we issued 87,279 warrants, and upon closing the second tranche, we issued 11,567 warrants. The warrants are exercisable for a period commencing 6 months and ending 36 months after the closing of the financing. Collectively, we refer to these warrants as Placement Agent Warrants - 2017. We estimated the fair value of the Placement Agent Warrants - 2017 at $174,000 using the Black-Scholes option valuation model with the following assumptions: market prices of the stock of $4.49 per share for the first tranche and $4.69 per share for the second tranche, time to maturity of 3 years, volatility of 60%, zero expected dividend rate and risk free rates of 1.59% for the first tranche and 1.63% for the second tranche. The allocation of the fair value of these warrants was included in additional paid-in capital on the consolidated balance sheet.

A roll-forward of warrant activity from January 1, 2016 to December 31, 2016 is shown in the following table:

	Issued and Outstanding Warrants as of January 1, 2016	Warrants Issued	Warrants Exercised/ Expired		Issued and Outstanding Warrants as of December 31, 2016
Bridge Warrants	249,999	—	—		249,999
Consulting Warrant	117,778	—	(19,778)	(1)	98,000
Financing Warrants	78,186	—	—		78,186
Underwriting Warrant	310,500	—	—		310,500
IR Consulting Warrants	48,000	—	—		48,000
Private Placement Warrants - 2016	—	2,096,724	(101,600)	(2)	1,995,124
Underwriting Warrants - Public Offering 2016	—	135,750	—		135,750
	804,463	2,232,474	(121,378)		2,915,559

(1) During the year ended December 31, 2016, there were 19,778 common stock warrants that were exercised through a cashless exercise which netted 19,693 shares being issued.

(2) During the year ended December 31, 2016, there were 3,600 common stock warrants that were exercised through a cashless exercise which netted 1,375 shares being issued. Additionally, there were 98,000 warrants exercised for cash.

A roll-forward of warrant activity from January 1, 2017 to December 31, 2017 is shown in the following table:

	Issued and Outstanding Warrants as of January 1, 2017	Warrants Issued	Warrants Exercised/ Expired		Issued and Outstanding Warrants as of December 31, 2017
Bridge Warrants	249,999	—	—		249,999
Consulting Warrant	98,000	—	(85,777)	(1)	12,223
Financing Warrants	78,186	—	(15,656)	(2)	62,530
Underwriting Warrant	310,500	—	—		310,500
IR Consulting Warrants	48,000	—	(42,000)	(3)	6,000
Private Placement Warrants - 2016	1,995,124	—	(1,104,061)	(4)	891,063
Underwriting Warrants - Public Offering 2016	135,750	—	(13,575)	(5)	122,175
Private Placement Warrants - February 2017	—	1,626,898	(1,626,898)	(6)	—
Private Placement Warrants - September 2017	—	1,976,919	—		1,976,919
Placement Agent Warrants - 2017	—	98,846	—		98,846
	2,915,559	3,702,663	(2,887,967)		3,730,255

(1) During the year ended December 31, 2017, there were 85,777 common stock warrants that were exercised through cashless exercises which netted 85,620 shares being issued.

(2) During the year ended December 31, 2017, there were 15,656 common stock warrants that were exercised through a cashless exercise which netted 6,842 shares being issued.

(3) During the year ended December 31, 2017, 42,000 warrants expired.

(4) During the year ended December 31, 2017, there were 122,281 common stock warrants that were exercised through cashless exercises which netted 49,063 shares being issued. Additionally, there were 981,780 warrants that were exercised for cash, which included 836,780 warrants exercised subject to inducement, which offered the warrant holder an inducement fee of $0.29/share to exercise the warrant in full for cash immediately.

(5) During the year ended December 31, 2017, there were 13,575 common stock warrants that were exercised through a cashless exercise which netted 6,322 shares being issued.

(6) During the year ended December 31, 2017, there were 1,626,898 common stock warrants that were exercised for cash. The warrants were exercised subject to inducement, which offered the warrant holder an inducement fee of $4.13/share to exercise the warrant in full for cash immediately.

NOTE 7—STOCKHOLDERS' EQUITY

Common Stock

Pursuant to our amended and restated certificate of incorporation, we are authorized to issue 47,000,000 shares of common stock. Holders of our common stock are entitled to dividends as and when declared by the board of directors, subject to rights and holders of all classes of stock outstanding having priority rights to dividends. There have been no dividends declared to date. Each share of common stock is entitled to one vote.

On April 25, 2016, we completed the private placement sale of 1,996,880 units at a price of $2.985 per unit to institutional and individual investors, which included existing investors, executives and board members. Each unit consists of one share of our common stock and one warrant to purchase one share of our common stock at an exercise price of $2.86 for a period commencing 6 months and ending 36 months after the closing of the financing. We also issued to the placement agents in the financing, warrants to purchase an aggregate of 99,844 shares of our common stock at an exercise price of $2.86 for a period commencing 6 months and ending 36 months after the closing. Gross proceeds were $6.0 million with net proceeds of $5.2 million after deducting placement agent fees and offering expenses. We registered for resale by the investors the shares of common stock, and the shares of common stock issuable upon exercise of the warrants, purchased by the investors in the financing pursuant to a registration statement that was declared effective by the SEC in May 2016.

On September 14, 2016, we completed the sale of 2,715,000 shares of common stock at a price of $4.25 per share in an underwritten public offering. We also issued to the underwriter warrants to purchase 135,750 shares of our common stock at an exercise price of $4.25 exercisable for a 2 year period commencing September 9, 2017. Gross proceeds were $11.5 million with net proceeds of $10.6 million after deducting underwriter fees and offering expenses. The shares were issued pursuant to a shelf registration statement that we filed with the SEC, which became effective in May 2016.

On February 22, 2017, we completed the private placement sale of 1,626,898 units at a price of $4.61 per unit to one investor. Each unit consists of one share of our common stock and one warrant to purchase one share of our common stock at an exercise price of $8.25 for a period commencing 6 months and ending 30 months after the closing of the financing. Gross proceeds were $7.5 million. We incurred $29,000 of legal expenses in connection with the financing. We registered for resale by the investor the shares of common stock, and the shares of common stock issuable upon exercise of the warrants, purchased by the investor in the financing pursuant to a registration statement that was declared effective by the SEC in April 2017.

On October 2, 2017, we completed the private placement sale of 1,976,919 units. Each unit consisted of one share of our common stock and one warrant to purchase one share of our common stock at an exercise price of $4.85 per share for a period commencing 6 months and ending 36 months from September 28, 2017, the date of the first closing of the offering. The sale closed in two rounds with the first closing on September 28, 2017 which included the private placement sale of 1,745,581 units at a price of $4.70 per unit to institutional and individual investors. Gross proceeds in the first closing were $8.2 million with net proceeds of $7.5 million after deducting placement agent fees and offering expenses. The second closing, completed on October 2, 2017, was for 231,338 units and gross proceeds of $1.1 million with net proceeds of $1.0 million after deducting placement agent fees and offering expenses. We also issued to the placement agent, warrants to purchase an aggregate of 98,846 shares of our common stock at an exercise price of $4.85 per share for a period commencing 6 months and ending 36 months from September 28, 2017.

We have a Form S-3 universal shelf registration statement on file with the SEC. The universal shelf registration statement on Form S-3 permits us to sell, in one or more public offerings, shares of our common stock, shares of preferred stock or debt securities, or any combination of such securities and warrants to purchase securities, for proceeds in an aggregate amount of up to $35.0 million. As of December 31, 2017, we have raised a total of $11.5 million of gross proceeds from the sale of 2,715,000 shares of our common stock, leaving approximately $23.5 million of securities available for issuance pursuant to the Form S-3. The Form S-3 will expire in May 2019.

Preferred Stock

Pursuant to our amended and restated certificate of incorporation, we are authorized to issue 3,000,000 shares of preferred stock. The board of directors has the authority, without action by our stockholders, to designate and issue shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. To-date, no preferred shares have been issued.

NOTE 8— STOCK-BASED COMPENSATION

2014 Omnibus Incentive Plan

In January 2014, our board of directors approved the 2014 Omnibus Incentive Plan and amended and restated the plan in March 2014. Our stockholders approved the Amended and Restated 2014 Omnibus Incentive Plan, or the 2014 Plan, in March 2014. Our 2014 Plan initially permitted the issuance of equity based instruments covering up to a total of 1,400,000 shares of common stock. In June 2016, our board of directors and stockholders approved an increase of 1,300,000 shares and in June 2017 approved an additional increase of 3,250,000 shares of common stock bringing the total shares allowed under the plan to 5,950,000.

Option Valuation

We have computed the fair value of options granted to employees and non-employees using the Black-Scholes option valuation model. The compensation costs of non-employee arrangements are subject to re-measurement at each reporting period over the vesting terms as earned. Option forfeitures are estimated at the time of valuation and reduce expense ratably over the vesting period. This estimate will be adjusted periodically based on the extent to which actual option forfeitures differ, or are expected to differ, from the previous estimate, when it is material. The expected term used for options issued to non-employees is the contractual life and the expected term used for options issued to employees is the estimated period of time that options granted are expected to be outstanding. We have estimated the expected life of our employee stock options using the “simplified” method, whereby, the expected life equals the arithmetic average of the vesting term and the original contractual term of the option due to our lack of sufficient historical data. For consultants we use an estimated expected life of the remaining term of the stock option grant, which is initially ten years. Since our stock has not been publicly traded for a sufficiently long period of time, we are utilizing an expected volatility figure based on a review of the historical volatilities, over a period of time, equivalent to the expected life of the instrument being valued, of similarly positioned public companies within our industry. The risk-free interest rate was determined from the U.S. Treasury's Daily Treasury Yield Curve Rate with a term that best approximates the expected term of the instrument being valued.

Stock Options to Employees and Non-Employees

During the years ended December 31, 2016 and 2017, we granted incentive stock options for the purchase of 346,500 and 488,300 shares, respectively, of our common stock to our employees and consultants. The options granted in 2016 have an exercise price range of $1.93 per share to $5.50 per share with a term of ten years. The options granted in 2017 have an exercise price range of $4.36 per share to $7.80 per share with a term of ten years. The options vest over various periods, generally quarterly over sixteen quarters. The options granted in 2016 had an aggregate grant date fair value of $627,000 and the options granted in 2017 had an aggregate grant date fair value of $1.4 million utilizing the Black-Scholes option valuation model.

We estimated the fair value of stock options awarded during the years ended December 31, 2016 and 2017 using the Black-Scholes option valuation model. The fair values of stock options granted for the years were estimated using the following assumptions:

	Option Grants Awarded During the Year Ended December 31, 2016	Option Grants Awarded During the Year Ended December 31, 2017
Stock Price	$1.93 - $5.50	$4.36 - $7.80
Dividend Yield	0%	0%
Expected Volatility	60.0%	60.0%
Risk-free interest rate	1.30% - 2.06%	1.95% - 2.37%
Expected Term	7 years	7 to 10years

Stock-based compensation expense related to stock options for employees was $529,000 and $435,000 for the years ended December 31, 2016 and 2017, respectively. We estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from our estimates. We use historical data to estimate pre-vesting option forfeitures and record stock-based compensation expense only for those awards that are expected to vest. To the extent that actual forfeitures differ from our estimates, the difference is recorded as a cumulative adjustment in the period the estimates were revised. For the period from January 1, 2016 to June 30, 2016 we applied a forfeiture rate of zero as there had been minimal forfeitures to date. Beginning July 1, 2016, we applied a forfeiture rate of six percent, which is reflected in our stock-based compensation expense related to stock options for the year ended December 31, 2016 and 2017.

In August 2016, we modified certain stock options previously granted to a former executive. The modification was made in connection with the executive's termination. The modification included accelerated vesting of stock options to purchase 26,876 shares of common stock as well as an extension of the exercise period for all vested shares, including stock options to purchase 43,438 shares of common stock. As a result of the modification, additional stock compensation expense of $48,000 was recognized for the year December 31, 2016.

In January 2017, we modified certain stock options previously granted to a former executive. The modification was made in connection with the executive's termination. The modification included accelerated vesting of stock options to purchase 8,752 shares of common stock as well as an extension of the exercise period for all vested shares, including stock options to purchase 17,504 shares of common stock. As a result of the modification, additional stock compensation expense of $19,000 was recognized for the year ended December 31, 2017.

For stock options paid in consideration of services rendered by non-employees, we recognize compensation expense in accordance with the requirements of ASC 505-50. Non-employee stock option grants that do not vest immediately upon grant are recorded as an expense over the vesting period. At the end of each financial reporting period prior to performance, the value of these stock options, as calculated using the Black-Scholes option valuation model, is determined, and compensation expense recognized or recovered during the period is adjusted accordingly. Since the fair market value of stock options granted to non-employees is subject to change in the future, the amount of the future compensation expense is subject to adjustment until the common stock options are fully vested. Stock-based compensation expense related to stock options for consultants was $27,000 and $9,000 for the years ended December 31, 2016 and 2017, respectively.

Stock Option Award Activity

The following is a summary of our stock option activity during the year ended December 31, 2016:

	Number of Options	Weighted Average Exercise Price	Weighted Average Grant Date Fair Value	Weighted Average Remaining Life In Years
Outstanding, January 1, 2016	565,050	$ 6.57	$ 4.25	7.84
Granted	346,500	3.03	1.81	8.51
Exercised	—	—	—	—
Canceled/Forfeited	(109,860)	5.08	3.32	—
Outstanding, December 31, 2016	801,690	$ 5.25	$ 3.32	7.40

	Number of Options	Weighted Average Exercise Price	Weighted Average Grant Date Fair Value	Weighted Average Remaining Life In Years
Exercisable, January 1, 2016	302,415	$ 6.25	$ 4.11	7.07
Vested	173,010	5.37	3.43	5.95
Exercised	—	—	—	—
Canceled/Forfeited	(56,251)	5.87	3.87	—
Exercisable, December 31, 2016	419,174	$ 5.94	$ 3.86	6.00

The following is a summary of our stock option activity during the year ended December 31, 2017:

	Number of Options	Weighted Average Exercise Price	Weighted Average Grant Date Fair Value	Weighted Average Remaining Life In Years
Outstanding, January 1, 2017	801,690	$ 5.25	$ 3.32	7.40
Granted	488,300	4.62	2.79	9.51
Exercised	(32,928)	2.37	1.41	—
Canceled/Forfeited	(174,572)	6.4	4.18	—
Outstanding, December 31, 2017	1,082,490	$ 4.87	$ 3.00	8.38

	Number of Options	Weighted Average Exercise Price	Weighted Average Grant Date Fair Value	Weighted Average Remaining Life In Years
Exercisable, January 1, 2017	419,174	5.94	3.86	6.00
Vested	457,338	4.57	2.77	8.65
Exercised	(32,928)	2.37	1.41	—
Canceled/Forfeited	(139,281)	6.65	4.38	—
Exercisable, December 31, 2017	704,303	5.08	3.17	8.15

The following table presents information related to stock options outstanding and exercisable at December 31, 2017:

Options Outstanding		Options Exercisable	
Exercise Price	Outstanding Number of Options	Weighted Average Remaining Life In Years	Exercisable Number of Options
$1.93 - $2.00	149,000	8.10	65,198
$3.83 - $4.70	523,190	9.38	343,198
$5.06 - $6.00	250,000	6.67	197,199
$6.18 – $7.20	70,000	6.67	40,945
$7.54 – $7.80	67,800	6.96	41,817
$8.06 - $12.98	22,500	7.04	15,946
	1,082,490	8.15	704,303

As of December 31, 2017, there was $925,000 of unrecognized compensation expense related to unvested stock options, which is expected to be recognized over a weighted average vesting period of approximately 2.8 years. The aggregate intrinsic value of outstanding options and options vested as of December 31, 2016 were $647,000 and $146,000, respectively, representing options whose exercise price was less than the closing fair market value of our common stock of $5.05 per share. The aggregate intrinsic value of outstanding options and options vested as of December 31, 2017 were $2.9 million and $1.7 million, respectively, representing options whose exercise price was less than the closing fair market value of our common stock of $7.47 per share. There were no excess tax benefits realized for tax deductions from stock options exercised during the year ended December 31, 2016 as no options were exercised. There were no excess tax benefits realized for tax deductions from stock options exercised during the year ended December 31, 2017 as we have recorded a full valuation allowance against our deferred income taxes.

Restricted Stock Units Activity

We account for restricted stock units issued to employees at fair value, based on the market price of our stock on the date of grant, net of estimated forfeitures. The fair value of non-employee restricted stock units awarded are re-measured as the awards vest, and the resulting increase in fair value, if any, is recognized as expense in the period the related services are rendered. During the years ended December 31, 2016 and 2017 we recorded $1.7 million and $2.6 million, respectively, of stock-based compensation related to the restricted stock unit shares that have been issued to-date.

A summary of restricted stock unit activity for the year ended December 31, 2016 is as follows:

	Number of Restricted Share Units	Weighted-Average Grant-Date Fair Value Per Share
Outstanding at January 1, 2016	375,629	$ 6.16
Granted	1,383,159	3.22
Vested	(262,201)	4.54
Forfeited	(41,029)	5.64
Outstanding at December 31, 2016	1,455,558	$ 3.64

A summary of restricted stock unit activity for the year ended December 31, 2017 is as follows:

	Number of Restricted Share Units	Weighted-Average Grant-Date Fair Value Per Share
Outstanding at January 1, 2017	1,455,558	$ 3.64
Granted	722,400	5.37
Vested	(649,359)	4.26
Forfeited	(51,741)	5.40
Outstanding at December 31, 2017	1,476,858	$ 4.96

As of December 31, 2017, there was $5.0 million of unrecognized compensation expense related to unvested restricted stock unit agreements which is expected to be recognized over a weighted-average period of approximately 2.4 years. For restricted stock unit awards subject to graded vesting, we recognize compensation cost on a straight-line basis over the service period for the entire award.

Market-based Awards

In August 2016, we granted 250,000 market-based restricted stock units to an executive. The restricted stock units are subject to market-based vesting requirements, measured quarterly, based on the average of (a) the average high daily trading price of our common stock for each trading day during the last month of the applicable calendar quarter and (b) the average low daily trading price of our common stock for each trading day during the last month of the applicable calendar quarter, each as reported by The Nasdaq Stock Market, LLC. The restricted stock units are eligible to be earned on a quarterly basis based on a linear interpolation of the applicable share price, or in the case of a liquidation event, on the day of (or in connection with) such liquidation event based on the applicable transaction price. Once earned, the restricted stock units vest 50% on the date such restricted stock units become earned and 50% on September 30, 2019. We recognize compensation expense for restricted stock units with market-based conditions using a graded vesting model, based on the probability of the performance condition being met, net of estimated pre-vesting forfeitures. The share price on the date of issuance was $5.06 per share. To determine the fair value of the award we used a Monte Carlo simulation which simulates future stock prices for the Company and, hence, shares vested, pursuant to the award. A key input into the model is the expected volatility for our stock. This estimate considered the historical volatility of our stock as well as the stock price volatility of guideline public companies. The fair value was determined to be $74,000. For the years ended December 31, 2016 and 2017, we recognized $8,000 and $24,000, respectively, of stock compensation expense in connection with this award, which is included in general and administrative expenses. The unamortized expense related to this award is $41,000 and is expected to be recognized over 1.8 years.

Incentive Bonus Awards

We provide eligible employees, including executives, the opportunity to earn bonus awards upon achievement of predetermined performance goals and objectives. The purpose is to reward attainment of company goals and/or individual performance objectives, with award opportunities expressed as a percentage of base salary. Bonuses can be measured and paid quarterly and/or annually, and are paid in cash, equity or a combination of cash and equity, in the discretion of our compensation committee.

2015 Incentive Bonus Program

During 2015, our employees and executives participated in the 2015 Incentive Bonus Program. The awards under this program contained a combination of service conditions and performance conditions based on the achievement of specified performance thresholds approved by the board. The performance bonus amounts were based on each individual's salary paid during the year multiplied by a defined bonus multiplier percentage, plus an additional 10% bonus for non-executive employees. In February 2016, upon board approval, we granted 90,265 restricted stock unit awards, of which 45,140 shares vested on the issuance date and the remaining shares vested on January 1, 2017. For the year ended December 31, 2015, we recognized stock compensation expense of $121,000 in connection with the program, which was included in accrued salaries and payroll related expenses as of year-end. The accrual was released upon issuance of the equity awards in 2016. For the year ended December 31, 2016 we recognized additional stock compensation expense of $44,000, which is included in the restricted stock unit expense discussed under "Restricted Stock Units Activity" above. There was no expense recorded during the year ended December 31, 2017 in connection with this program.

2016 Incentive Bonus Program

During 2016, our employees and executives participated in the 2016 Incentive Bonus Program. The program provided for the award of annual bonuses if certain performance goals, based on revenue and certain other non-monetary targets, were attained in our 2016 fiscal year. The bonus was payable in cash, restricted stock units or a combination of cash and restricted stock units, as determined by our compensation committee, with the number of restricted stock units to be determined by dividing the dollar value to be paid in restricted stock units by the average closing price of our common stock for the ten trading days ending on the last trading day of 2016. The restricted stock units would have vested in full on the tenth business day following grant. Although the specific performance objectives were not achieved, it was determined that a discretionary bonus would be awarded under the program based on the significant achievements made toward the objectives during the year. The payment method and terms remained the same as the original bonus program. The discretionary awards were granted in February of 2017, and consisted of cash awards totaling $688,000 and equity awards in the form of restricted stock units and stock options to vest in full 10 days following grant. The equity awards consisted of 27,390 restricted stock units with a grant date fair value of $119,000 based on the grant date share price of $4.36 and 125,880 stock options with a grant date fair value of $332,000 using the Black-Scholes option valuation model using the following assumptions: stock price of $4.36; dividend yield of 0%; expected volatility of 60%; risk-free rate of 2.15% and expected life of 7 years. For the year ended December 31, 2016, we recorded stock compensation expense of $451,000 in connection with these equity awards and salary expenses of $688,000 related to the cash portion of awards under this program. The total expense for these awards, $1.1 million, was recorded in the fourth quarter of 2016 and was included in accrued salaries and payroll-related expenses as of December 31, 2016. For the year ended December 31, 2016, $679,000 and $460,000 are included in research and development expenses and general and administrative expenses, respectively. There was no expense recorded for the year ended December 31, 2017 in connection with this program.

2017 Incentive Bonus Program

During 2017, our employees and executives are participating in the 2017 Incentive Bonus Program. The program provides for the award of quarterly and annual bonuses to our employees and executive officers if certain performance goals, based on company-wide billings, expenses and certain other individual non-monetary targets, are attained in quarterly and annual performance periods during our 2017 fiscal year. The awards contain a combination of service conditions and performance conditions based on the achievement of specified performance thresholds. The awards are based on each individual's annual salary multiplied by a bonus multiplier percentage which has been determined by our compensation committee. The plan also allows for additional discretionary awards to non-executive employees up to 10% of the total base salaries of non-executive employees. Additionally, the annual bonus, as it relates to executive employees, is subject to the achievement of certain stock price thresholds for the 10 trading days ending on the last trading day of 2017. The bonuses may be paid in the form of cash, stock options, restricted stock, or a combination thereof. The number of shares underlying equity awards granted to each employee will be determined based on the performance bonus amount to be paid in equity, based in part by utilizing the stock price on the grant date. We recognize compensation expense for the total amount of the bonuses earned during the period earned. For the year ended December 31, 2017, we recorded a total of $1.5 million of expense related to the 2017 incentive bonus plan as the performance conditions were achieved. Included in the expense for 2017 is $670,000 related to quarterly awards which were paid in the form of stock options and restricted stock units and has been recorded as stock compensation expense. Of the total expense recorded for the year ended December 31, 2017, $916,000 is included in research and development expenses and $625,000 is included in general and administrative expenses. As of December 31, 2017 there was $695,000 included in accrued salaries and payroll related expenses for this program.

2017 Non-executive Bonus Program

Effective July 1, 2017, our non-executive employees participated in the 2017 Non-executive Bonus Program. The program provided for the award of up to 300,000 restricted stock units to be awarded to non-executive employees and consultants based upon the achievement of certain performance conditions before the end of the year. Vesting of the restricted stock units are subject to continued service over the vesting period. Based on the achievement of performance conditions, 180,528 restricted stock units were granted on January 25, 2018. The awards will vest in four tranches with 25% of the shares vesting on each April 1, 2018, 2019, 2020 and 2021. We recorded $414,000 of stock compensation expense related to the 2017 Non-executive Bonus Program for the year ended December 31, 2017 of which $338,000 and $76,000 is included in research and development expenses and general and administrative expenses, respectively.

Common Stock Issued to Non-Employees

In February 2016, we issued 3,000 shares of our common stock to a consultant in exchange for employment recruiting services. In April 2016, we issued 5,549 shares of common stock to a previous employee in connection with a separation agreement. We recorded $6,000 in stock compensation expense related to the stock issuances for the year ended December 31, 2016. The amount of compensation expense related to the consultant shares issued represents the fair value of the stock on the dates of issuance. There was no expense recorded during the year ended December 31, 2016 related to the shares issued to our previous employee as the value of those shares had been accrued at the time of separation in 2015.

Total equity-based compensation costs recorded in the consolidated statements of comprehensive loss is allocated as follows:

	Year Ended December 31, 2016	Year Ended December 31, 2017
Research and development		
Employees	$ 944,000	$ 1,937,000
Non-employees	36,000	181,000
Total research and development	980,000	2,118,000
General and administrative		
Employees and directors	1,372,000	1,824,000
Non-employees	307,000	179,000
Total general and administrative	1,679,000	2,003,000
Total equity-based compensation	2,659,000	4,121,000

NOTE 9—COMMITMENT AND CONTINGENCIES

In October 2013, we signed a lease for office space for our corporate headquarters and moved into the new location in the first quarter of 2014. The lease had a term of 38 months and a rental cost of approximately $5,412 per month, increasing 3% annually after the first fourteen months. In addition, our share of building operating costs were estimated to be $2,101 per month. In April 2014, we amended the lease to add additional space which increased our rent to $8,286 per month beginning August 1, 2014 plus estimated monthly operating costs of $3,154 and extended the lease term through July, 2017. We had a renewal option for an additional 3 year term. The original lease included a tenant improvement allowance of $72,160 and the amended lease included an additional tenant improvement allowance of $38,320. The allowances were used to construct our office build-out and have been capitalized as leasehold improvements as of December 31, 2016 and 2017. The capitalized costs are being amortized over the amended lease term through July 2017. Effective April 2017, we amended the lease to add additional space and to extend our lease term through July 2018, with an option to extend through July, 2019. With the amendment, the total leased space is now 9,024 feet with monthly rent of $14,479 through July 31, 2017 and $13,987 from August 1, 2017 through the end of the lease, plus estimated monthly operating costs of approximately $7,000.

In November 2013, we signed a lease for our satellite development office in Burlingame, CA. The lease had a two-year term, and rental costs of approximately $4,000 per month. In May 2015, we renewed the lease for a one year period expiring November 30, 2016 with rental costs of $5,000 per month. Effective December 16, 2016, we signed a new lease of 5,248 square feet of office space within the same building in Burlingame, California commencing February 2017. The lease has a five-year term, and rental costs of approximately $17,000 per month.

Rent expense related to our facilities was $220,000 and $477,000, respectively, for the years ended December 31, 2016 and 2017.

Future minimum rent payments are as follows:

Years ending December 31,		
2018	$	430,000
2019	$	212,000
2020	$	218,000
2021	$	224,000
2022	$	19,000
Total minimum rent payments	$	1,103,000

Legal Proceedings—We are occasionally involved in legal proceedings and other matters arising from the normal course of business.

Beginning on March 17, 2015, three putative class action lawsuits were filed in the United States District Court for the Central District of California, naming us, Terry Lingren and John Philpott as defendants. The three lawsuits were consolidated into a single putative class action, In re Resonant Inc. Securities Litigation, Case No. 15-cv-01970 SJO (MRWx). On February 23, 2016, the plaintiffs filed a consolidated second amended complaint, purporting to assert claims under the federal securities laws against us, Terry Lingren, John Philpott, and the underwriter of our May 29, 2014 IPO. In the consolidated second amended complaint, the plaintiffs purported to be acting on behalf of a class consisting of purchasers or acquirers of our common stock between November 6, 2014 and April 2, 2015, as well as a class of persons or entities who purchased or acquired our shares in (or traceable to) our IPO. The plaintiffs alleged that, as a result of the defendants' allegedly false and/or misleading statements and/or omissions concerning our business, operations, prospects and performance, our common stock traded at artificially inflated prices between November 6, 2014 and April 2, 2015. On July 11, 2016, the court entered an order granting in part and denying in part our motion to dismiss the consolidated second amended complaint. The court granted the motion to dismiss with respect to plaintiffs' claims under Section 11 of the Securities Act of 1933 and Section 20(a) of the Securities Exchange Act of 1934. The court also granted the motion to dismiss plaintiffs' claims under Section 10(b) of the Securities Exchange Act of 1934 and Rule 10b-5 thereunder to the extent those claims were premised on alleged misstatements made on February 26, 2015. The court denied the motion to dismiss with respect to plaintiffs' claims under Section 15 of the Securities Act of 1933, and with respect to plaintiffs' claims under Section 10(b) of the Securities Exchange Act of 1934 and Rule 10b-5 thereunder to the extent those claims were premised on alleged misstatements made in November and December of 2014 and January of 2015. On October 26, 2016, the court issued an order clarifying its July 11, 2016 order on the motion to dismiss, making clear that the court's actual intent was to grant the motion to dismiss with respect to the claims under Section

15 of the Securities Act of 1933, while denying the motion to dismiss with respect to the claims under Section 20(a) of the Securities Exchange Act of 1934.

On November 22, 2017, the court granted final approval of a settlement which fully resolved plaintiffs' claims and provided for a release of all claims asserted in the class action litigation, bringing the litigation to a close. The settlement amount was paid by our insurance carrier.

On September 24, 2015, a purported shareholder derivative action was filed in the United States District Court for the Central District of California, and is pending before the same federal district court judge to whom the putative class action was assigned. In the derivative action, the plaintiff alleges that certain of our officers and directors breached their fiduciary duties to us, including by allegedly violating the federal securities laws and exposing us to possible financial liability.

The parties to the shareholder derivative action have reached a settlement that, if approved by the court, will fully resolve plaintiff's claims and provide for the release of all claims asserted in the litigation. On February 1, 2018, the court entered an order granting preliminary approval of the settlement. The court has scheduled a final approval hearing to take place on April 2, 2018. We can make no assurances that the court will grant final approval of the settlement.

We intend to continue to defend ourselves vigorously in these actions.

We are not party to any other legal proceedings. We may, from time to time, be party to litigation and subject to claims incident to the ordinary course of business. As our growth continues, we may become party to an increasing number of litigation matters and claims. The outcome of litigation and claims cannot be predicted with certainty, and the resolution of any future matters could materially affect our future financial position, results of operations or cash flows.

We have directors' and officers' liability insurance, which will be utilized in the defense of these matters. The liability insurance may not cover all of the future liabilities we may incur in connection with the foregoing matters. As of December 31, 2017, we have incurred legal expenses of approximately $750,000.

Legal fees and other costs associated with such actions are expensed as incurred. We assess, in conjunction with our legal counsel, the need to record a liability for litigation and contingencies. Litigation accruals are recorded when and if it is determined that a loss related matter is both probable and reasonably estimable. Material loss contingencies that are reasonably possible of occurrence, if any, are subject to disclosure. Based on the very early stage of litigation for the cases referred to above, it is not possible to estimate the amount or range of possible loss that might result from an adverse judgment or a settlement of these matters. We will evaluate developments in legal proceedings and other matters on a quarterly basis. As of December 31, 2016 and 2017, there was no litigation or contingency with at least a reasonable possibility of a material loss. No losses have been recorded during the years ended December 31, 2016 and 2017, respectively, with respect to litigation or loss contingencies.

NOTE 10—INCOME TAXES

The benefit from income taxes by jurisdiction consist of the following for the years ended December 31, 2016 and 2017:

	Year Ended December 31, 2016	Year Ended December 31, 2017
U.S. federal		
Current	$ —	$ —
Deferred	—	—
Total U.S. federal	—	—
U.S. state and local		
Current	1,000	1,000
Deferred	—	—
Total U.S. state and local	1,000	1,000
Foreign		
Current	—	—
Deferred	(23,000)	(15,000)
Total foreign	(23,000)	(15,000)
Benefit from income taxes	$ (22,000)	$ (14,000)

Income taxes differ from the amounts computed by applying the U.S. federal income tax rate to pretax income (loss) before income taxes as a result of the following for the years ended December 31, 2016 and 2017:

	Year ended December 31, 2016	Year ended December 31, 2017
Expected income tax benefit	$ (5,191,000)	$ (7,357,000)
State income tax (benefit), net of federal benefit	(1,022,000)	(1,176,000)
Valuation allowance	6,219,000	7,398,000
Permanent differences:		
Stock options	173,000	95,000
Warrants	—	914,000
Transaction costs	31,000	—
Research & development credit	(267,000)	(263,000)
Adjustment to deferred taxes	(12,000)	267,000
Foreign rate differential	28,000	19,000
Other	19,000	89,000
Provision for (benefit from) for income taxes	$ (22,000)	$ (14,000)

For year ended December 31, 2016 and 2017, we recorded a net income tax benefit of $22,000 and $14,000, respectively, which included $1,000 and $1,000 of income tax expense offset by $23,000 and $15,000, respectively, for the change in deferred foreign taxes. Deferred income tax reflects the tax effects of temporary differences that gave rise to significant portions of our deferred tax assets and liabilities.

Deferred income taxes consisted of the following as of December 31, 2016 and 2017:

	Year ended December 31, 2016	Year ended December 31, 2017
U.S. federal and state deferred tax assets—long term:		
Accrued payroll	$ 525,000	$ 376,000
Accrued expenses	—	21,000
Fixed assets	80,000	111,000
Intangibles	702,000	457,000
Research & development credit	1,257,000	1,464,000
Net operating loss	11,515,000	13,204,000
Stock compensation	772,000	539,000
New jobs credit	7,000	8,000
Total long-term assets	14,858,000	16,180,000
Total deferred tax assets	14,858,000	16,180,000
U.S. federal and state deferred tax liabilities—long term:		
Fixed assets	—	—
Total deferred tax liabilities	—	—
Net deferred tax assets - long term	14,858,000	16,180,000
Less: Valuation allowance	(14,858,000)	(16,180,000)
Net deferred tax assets	$ —	$ —
Foreign deferred tax assets—long term:		
Net operating loss	$ 16,000	$ 12,000
Total foreign deferred tax assets	16,000	12,000
Foreign deferred tax liabilities—long term:		
Intangibles	(32,000)	(13,000)
Total foreign deferred tax liabilities	(32,000)	(13,000)
Net foreign deferred tax liabilities	$ (16,000)	$ (1,000)

In December 2017, the Tax Cuts and Jobs Act (the "2017 Tax Act") was enacted. The 2017 Tax Act represents major tax reform legislation that, among other provisions, reduced the U.S. corporate tax rate. The reduction in the tax rate reduced our federal and state net deferred tax assets by $6.1 million, primarily related to our net operating loss carryforwards. Due to the full valuation allowance recorded against our federal and state net deferred tax assets, there was no impact to our income tax expense for the year ended December 31, 2017.

We recorded a full valuation allowance against our U.S. federal and state net deferred tax assets at December 31, 2016 and December 31, 2017. In determining the need for a valuation allowance, we reviewed all available evidence pursuant to the requirements of FASB ASC 740. Based upon our assessment of all available evidence, we have concluded that it is more likely than not that the net deferred tax assets will not be realized. For the year ended December 31, 2016, the valuation allowance increased by $6.2 million. For the year ended December 31, 2017, the valuation allowance increased by $1.3 million.

As of December 31, 2017, we had federal net operating loss carryforwards of approximately $47.0 million, state net operating loss carryforwards of approximately $46.9 million and foreign net operating loss carryforwards of $75,000 in Switzerland. The federal net operating loss carryforwards will begin to expire in 2033, and the state net operating loss carryforwards will begin to expire in 2033. Our ability to utilize net operating loss carryforwards may be limited in the event that a change in ownership, as defined in Section 382 of the Internal Revenue Code, occurs in the future. In the event a change of ownership occurs, it will limit the annual usage of the carryforwards in future years. Management believes that certain changes in control have occurred which resulted in limitations on our net operating loss carryforwards; however, management has determined that these limitations will not impact the ultimate utilization of the net operating loss carryforwards.

We recognize interest and penalties related to income tax matters in income taxes, and there were none during the years ended December 31, 2016 and 2017.

The adoption of ASC 740 guidance required us to identify, evaluate and measure all uncertain tax positions taken or to be taken on tax returns and to record liabilities for the amount of these positions that may not be sustained, or may only partially be sustained, upon examination by the relevant taxing authorities. Although we believe that our estimates and judgments were reasonable, actual results may differ from these estimates. Some or all of these judgments are subject to review by the taxing authorities. We have no significant uncertain tax positions for the years ended December 31, 2016 and 2017.

Our annual income taxes and the determination of the resulting deferred tax assets and liabilities involve a significant amount of judgment. Our judgments, assumptions and estimates relative to current income taxes take into account current tax laws, their interpretation of current tax laws and possible outcomes of future audits conducted by domestic tax authorities. We operate within federal and state taxing jurisdictions and are subject to audit in these jurisdictions. These audits can involve complex issues which may require an extended period of time to resolve. We are currently not being examined by any tax authorities. We are subject to taxation in the United States, California, Massachusetts and Switzerland. As of December 31, 2017, our tax years remain open to examination by the taxing authorities for all years since our incorporation in 2013.

NOTE 11—RELATED PARTY TRANSACTIONS

In August 2016, we entered into a consulting agreement with a member of our board of directors. Under the agreement, the board member would provide engineering design and fabrication advisory services for an hourly rate, with total payments not to exceed $120,000 during any twelve-month period. During the years ended December 31, 2016 and 2017, we incurred expenses of $42,000 and $26,000, respectively, in connection with the consulting agreement. As of December 31, 2016, we owed $16,000 to the board member in connection with this agreement and it was paid in 2017. The agreement was terminated effective April 1, 2017.

NOTE 12—EMPLOYEE BENEFIT PLAN

We have a 401(k) Savings Retirement Plan that covers substantially all domestic employees who meet the plan's eligibility requirements and provides for an employee elective contribution and employer matching contributions.

We recorded matching contributions to the retirement plan of $204,000 and $284,000 for the years ended December 31, 2016 and 2017, respectively.

NOTE 13—SUBSEQUENT EVENTS

We evaluated subsequent events through February 27, 2018, the date of issuance of the consolidated financial statements for the year ended December 31, 2017.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

The phrase “disclosure controls and procedures” refers to controls and procedures designed to ensure that information required to be disclosed in our reports filed or submitted under the Securities Exchange Act of 1934, as amended, or the Exchange Act, such as this Annual Report on Form 10-K, is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the U.S. Securities and Exchange Commission, or SEC. Disclosure controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our chief executive officer, or CEO, and chief financial officer, or CFO, as appropriate to allow timely decision regarding required disclosure.

Our management, with the participation of our CEO and CFO, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), as of December 31, 2017, the end of the period covered by this Annual Report on Form 10-K. Based on such evaluation, our CEO and CFO have concluded that as of December 31, 2017, our disclosure controls and procedures were designed at a reasonable assurance level and were effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the SEC, and that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles.

Our management, with the participation of our CEO and CFO, has assessed the effectiveness of the internal control over financial reporting as of December 31, 2017. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”) in *Internal Control - Integrated Framework (2013 Framework)*. Based on this evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2017.

This Annual Report on Form 10-K does not include an attestation report of our registered public accounting firm on our internal control over financial reporting due to an exemption established by the JOBS Act for “emerging growth companies.”

Changes in Internal Controls over Financial Reporting

There was no change in our internal control over financial reporting identified in management’s evaluation pursuant to Rules 13a-15(d) or 15d-15(d) of the Exchange Act during the quarter ended December 31, 2017 that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Directors and Executive Officers of Resonant

The following table provides information regarding our executive officers and directors as of February 26, 2018. There are no family relationships among any of our directors or executive officers.

Name	Age	Position
John Major(1)(3)	72	Chairman of the Board
George Holmes	55	Chief Executive Officer and Director
Janet Cooper(1)(3)	64	Director
Michael Fox(2)	40	Director
Robert Hammond	70	Chief Technology Officer and Director
Thomas Joseph(2)(3)	68	Director
Richard Kornfeld(1)(2)	57	Director
Jean Rankin(2)	59	Director
Jeff Killian	58	Chief Financial Officer and Secretary
Neal Fenzi	57	Executive Vice President of Engineering

(1) Member of the audit committee

(2) Member of the compensation committee

(3) Member of the nominating and governance committee

Directors

John Major. Mr. Major has served as a member of our board of directors since December 2013. Mr. Major founded MTSG, a strategic consulting and investment company of which he serves as president, in 2003. From April 2004 to October 2006, he also served as chief executive officer of Apacheta Corp., a privately held mobile, wireless software company whose products are used to manage retail inventory, service and deliveries. From August 2000 until January 2003, Mr. Major was chairman and CEO of Novatel Wireless Inc., a wireless data access solutions company. Previously, Mr. Major served as corporate executive vice president of Qualcomm and president of its wireless infrastructure division and CEO of Wireless Knowledge. For approximately 18 years, he held various executive and leadership positions at Motorola Inc., the most recent of which was senior vice president and chief technology officer. He served on the University of California President's Board on Science and Innovation. He serves as Chairman of the Dean's Advisory Committee of the University of Rochester Hajim School of Engineering and Applied Science and as Chairman of the University of Illinois at Chicago-Engineering School Advisory Board. Mr. Major also serves as Chairman Emeritus of the Board of EvoNexus, a nonprofit telecom industry group and incubator and Chairman of the La Jolla Institute, the premier research institute focused on the immune system. Previously, he has served on the Computer Science and Telecommunications Board of the National Academy of Science, and the board of the Software Engineering Institute. He currently serves on the boards of directors of Broadcom, Lennox International Inc., Littelfuse Inc., ORBCOMM Inc. and Resonant Inc. Additionally, he is chairman of the board of Pulse Electronics. Mr. Major received a B.S. in Mechanical and Aerospace Engineering from the University of Rochester, an M.S. in Mechanical Engineering from the University of Illinois, an M.B.A. from Northwestern University and a J.D. from Loyola University. Mr. Major is a named inventor in 13 U.S. patents.

Mr. Major was selected to serve on our board of directors because of his extensive experience with the technologies we are developing and technology companies in general, and his experience serving on the boards of directors of very substantial public companies. He contributes substantial experience in product innovation, compensation programs and mergers and acquisitions.

George Holmes. Mr. Holmes joined Resonant in February 2016 as President and Chief Commercial Officer and as a member of our board of directors, and was appointed Chief Executive Officer in January 2017. Mr. Holmes brings to us more than 30 years' leadership experience in sales, marketing and management spanning a broad range of technologies, including semiconductor, optical components and systems and sub-systems for telecom and CATV. Prior to joining Resonant, Mr. Holmes most recently served as Chief Commercial Officer for Tigo Energy, where he was responsible for creating the company's customer acquisition and expansion strategy. From 2013 to 2015, he worked for Energous Corporation, a developer of wire-free charging technology for electronic devices, first as Senior Vice President Sales & Marketing then as Chief Commercial Officer where he was responsible for securing development and licensing agreements, overseeing IP strategy and process, spearheading regulatory strategy and tactics and public and investor relations. From 2011 to 2013, he served as Vice President of Sales at SolarBridge Technologies, overseeing all sales, business development and sales operations. His prior experience includes serving as Senior Vice President of Sales and Marketing for PureEnergy Solutions, a developer and manufacturer of wireless power products as well as senior sales executive roles at Agere Systems (formerly Lucent MicroElectronics), Ortel Corp (acquired by Lucent), Level One Communications and Symmetricom. Mr. Holmes holds a B.A. in Business from the University of Puget Sound and a Diploma in international business from Nyenrode University, Netherlands. Mr. Holmes was selected to serve on our board of directors because of his extensive experience commercializing technologies.

Janet Cooper. Ms. Cooper has served as a member of our board of directors since January 2014. Ms. Cooper served as Senior Vice President and Treasurer of Qwest Communications International Inc. (now doing business as CenturyLink) from September 2002 to June 2008, and served as Qwest's Senior Vice President, Finance from 2000 to 2001. From 2001 to 2002, Ms. Cooper was Chief Financial Officer and Senior Vice President of McDATA Corporation (subsequently purchased by Brocade Communications Systems and then Broadcom Limited). From 1998 to 2000, she served in various senior level finance positions at US West Inc., including as Vice President, Finance and Controller and Vice President and Treasurer. Ms. Cooper serves on the board of directors of Lennox International Inc. and The Toro Company. She is also a member of the Board of Trustees of Rose-Hulman Institute of Technology. Ms. Cooper received a B.S. in Math and Computer Science from the University of Illinois, an M.S. in Applied Math from the University of Illinois, and an M.B.A. from the University of Chicago Booth School of Business.

Through her experience in various senior level financial positions with Qwest, McDATA Corporation and US West, among other positions she has held, Ms. Cooper has developed a substantial financial and accounting background and expertise, which she contributes to our board of directors. Ms. Cooper's financial expertise and acumen in capital markets, audit, tax, accounting, treasury and risk-management matters assists our board in providing oversight to management on these matters. Ms. Cooper's senior leadership experience also enables her to provide strategic input to our board, in addition to her financial expertise, discipline and oversight.

Michael J. Fox. Mr. Fox has served as a member of our board of directors since February 2016. He is the Chief Executive Officer of Park City Capital, LLC, a value-oriented investment management firm he founded in June 2008 and the Co-Founder of Julie's Real Foods LLC, a fast-growing natural food company that he co-founded with his wife, Julie, in December 2015. From 2000 to 2008, Mr. Fox worked at J.P. Morgan in New York, most recently as Vice President and Senior Business Services Analyst. As J.P. Morgan's Senior Business Services Analyst, Mr. Fox headed the firm's Business Services equity research group from 2005 to 2008. From 2000 to 2005 Mr. Fox was a member of J.P. Morgan's Leisure equity research group, which was consistently recognized by Institutional Investor's All America Research Team. Mr. Fox serves on the board of directors of Regional Health Properties, Inc. Mr. Fox received his Bachelor of Business Administration degree from Texas Christian University. Mr. Fox's expertise and background in the financial and equity markets, coupled with Park City Capital's significant financial stake in our company, will enable him to provide our board of directors and management with valuable perspectives on executing strategies to maximize stockholder value.

Robert Hammond. Dr. Hammond has served as our Chief Technology Officer and as a member of our board of directors since June 2013, and served as Chief Technology Officer of our predecessor, Resonant LLC from June 2012 until June 2013. Prior to founding Resonant, Dr. Hammond served for more than 20 years as Senior Vice President and Chief Technology Officer of Superconductor Technologies, Inc., where he was involved in the development of high temperature superconducting materials, cryogenic refrigeration and packaging, and RF and microwave circuits. Prior to that, he was Leader Electronics Advanced Development at Los Alamos National Labs. Dr. Hammond holds a BS degree in Physics, a MS degree in Applied Physics and a PhD in Applied Physics, each from the California Institute of Technology. Dr. Hammond was selected to serve on our board of directors because of the perspective and experience he brings as one of our co-founders and as a significant stockholder, his extensive experience with the technologies we are developing and technology companies in general, and his experience serving as a senior executive officer of a public company.

Thomas Joseph. Dr. Joseph has served as a member of our board of directors since July 2015. Dr. Joseph brings deep expertise in the radio frequency, compound semiconductor, cellular, fiber optics, and surface acoustic wave (SAW) industries. Dr. Joseph worked at RFMD (now Qorvo) from 2000 until his retirement in 2013. At RFMD, Dr. Joseph was Senior Manager, Technical Projects for the Cellular Products Group leading cross-functional teams that developed high volume, front-end component solutions for cellular handsets. He began his career at Hughes Aircraft Company. He then joined TRW Space and Defense (now Northrop Grumman) where he established, grew and oversaw the foundry products business to make available

GaAs process technology to outside commercial and defense customers. Dr. Joseph earned his B.S. in Applied Physics from the California Institute of Technology. He earned his PhD and MSEE in Electrical Engineering from the University of Southern California. Dr. Joseph wrote his dissertation on the design, fabrication, testing and performance modeling of SAW resonators, performing much of the seminal work on these devices. He has authored or co-authored more than 50 technical publications, and symposium presentations on SAW devices, GaAs circuits and processes, integrated and fiber optics and acousto-optics. Dr. Joseph is a life member of the Institute of Electrical and Electronics Engineers (IEEE).

Dr. Joseph was selected to serve on our board of directors because of his extensive experience with the technologies we are developing and his business relationships in the industries we serve.

Richard Kornfeld. Mr. Kornfeld has served as a member of our board of directors since December 2013. Mr. Kornfeld currently serves as President and Chief Executive Officer of Kitu Systems, Inc., a leader in communication protocol software for the Internet-of-Things market. From 2006 to 2008, he served as Executive Vice President and Chief Strategy Officer of NextWave Wireless. From 2004 to 2006, he served as President and Chief Executive Officer of Staccato Communications. Prior to joining Staccato, Mr. Kornfeld was Vice President and General Manager of Texas Instruments' Wireless Chipset Business Unit. He joined Texas Instruments as part of the acquisition of Dot Wireless, where he served as Co-Founder, Chairman and Chief Executive Officer. Prior to founding Dot Wireless, Mr. Kornfeld was a founder of NextWave Telecom, Inc., where he was the Senior Vice President and General Manager of the Consumer Products division. Previously, Mr. Kornfeld was Vice President of Engineering at Qualcomm Inc., leading the development of the first commercial CDMA subscriber equipment. Prior to Qualcomm, Mr. Kornfeld held various technical positions at M/A-Com Linkabit. Mr. Kornfeld serves on the board of the La Jolla Institute of Allergy and Immunology and to Kitu Systems, Inc. He serves on the Council of Advisors of University of California, San Diego's Jacobs School of Engineering where he also participates in the university's Von Liebig Clean Tech grant activities. He also serves on AIPAC's San Diego council and AIPAC's national council. Mr. Kornfeld also was Vice-Chairman of Commnexus and the founding Chairman of EvoNexus. Mr. Kornfeld received his BS degree in 1982 from the University of California, San Diego where he was also named the Alumni of the Year in 2001. Mr. Kornfeld was selected to serve on our board of directors because of his extensive experience with the technologies we are developing and technology companies in general, including some of San Diego's most notable tech companies.

Mr. Kornfeld was selected to serve on our board of directors because of his extensive experience with the technologies we are developing and technology companies in general, including some of San Diego's most notable tech companies.

Jean F. Rankin. Ms. Rankin has served as a member of our board of directors since July 2017. Ms. Rankin served as Executive Vice President, Secretary and General Counsel for LSI Corporation, a designer of semiconductors and software that accelerated storage and networking in data centers, mobile networks and client computing, from 2007 to May 2014, when LSI was acquired by Broadcom Limited (formerly Avago Technologies). Ms. Rankin was a key participant in the strategic process and negotiations resulting in the company's successful sale to Broadcom. Ms. Rankin currently serves on the Board of Directors of InterDigital, Inc., a public company that designs and develops advanced technologies to enable and enhance wireless communications. InterDigital has an extensive patent portfolio and derives a majority of its revenue from licensing its patents. Ms. Rankin chairs the Compensation Committee and is also a member of the Nominating and Governance Committee. Prior to that, Ms. Rankin served as General Counsel for Agere Systems Inc., before it merged with LSI in April 2007. Prior to Agere, Ms. Rankin held several positions of increasing responsibility at Lucent Technologies, Inc. over a five year span, as well as at AT&T for six years. She holds a law degree from University of Pennsylvania Law School and a B.A. from the University of Virginia. Ms. Rankin was selected to serve on our board of directors because of her extensive experience as an executive of technology companies.

Executive Officers

Please see "--Directors" above for information about Mr. Holmes and Dr. Hammond, who also serve on our Board.

Jeff Killian. Mr. Killian has served as our Chief Financial Officer since October 2016. Mr. Killian served as Cascade Microtech, Inc.'s Chief Financial Officer, Vice President of Finance, and Secretary from April 2010 until June 2016 when Cascade Microtech, Inc. was acquired by FormFactor, Inc. From June 2008 to April 2010, Mr. Killian served as the Director of Finance at Cascade Microtech, Inc. Prior to this, from May 1997 to June 2008, Mr. Killian served in various financial roles at TriQuint Semiconductor, Inc. including Treasurer, Director of Financial Planning and Analysis, Corporate Controller, and as its Director of Oregon Finance. Mr. Killian holds a B.S. in Finance from Oregon State University and an M.B.A. from the University of Oregon.

Neal Fenzi. Mr. Fenzi is a co-founder of Resonant and has served as our Executive Vice President of Engineering since June 2017. Prior to that, Mr. Fenzi served as our Chief Operating Officer from December 2014 until June 2017, our Vice President of Engineering from June 2013 to December 2014, and our Secretary and Treasurer from June 2013 until January

2014. Mr. Fenzi also served as Vice President of Engineering of our predecessor, Resonant LLC, from June 2012 until June 2013. Prior to founding Resonant, from 1991 until June 2012, Mr. Fenzi served in engineering, operations and marketing positions at Superconductor Technologies Inc., including as Vice President of Engineering, Chief Engineer and Vice President of Product Management. Mr. Fenzi holds a BSEE degree from New Mexico State University.

Corporate Governance

Our business affairs are managed under the direction of our board of directors, which is currently comprised of eight members. Each director's term will continue until the election and qualification of his or her successor, or his or her earlier death, resignation, or removal.

Committees of the Board of Directors

Our board of directors has established an audit committee, a compensation committee and a nominating and governance committee, each of which has the composition and responsibilities described below. Members will serve on these committees until their resignation or as otherwise determined by our board of directors. Each of these standing committees operates under a written charter adopted by the board of directors. The charters are available on the Investors portion of our website at www.resonant.com.

Audit Committee. Messrs. Kornfeld and Major and Ms. Cooper, each of whom is a non-employee member of our board of directors, serve on our audit committee, and Ms. Cooper chairs the committee. Our board of directors has determined that each of the members of the audit committee satisfies the requirements for independence and financial literacy under the rules and regulations of NASDAQ and the SEC. Our board of directors has also determined that Ms. Cooper qualifies as an "audit committee financial expert," as defined in the SEC rules, and satisfies the financial sophistication requirements of NASDAQ. The audit committee is responsible for, among other things:

- appointing, overseeing, and if need be, terminating any independent auditor;
- assessing the qualification, performance and independence of our independent auditor;
- reviewing the audit plan and pre-approving all audit and non-audit services to be performed by our independent auditor;
- reviewing our financial statements and related disclosures;
- reviewing the adequacy and effectiveness of our accounting and financial reporting processes, systems of internal control and disclosure controls and procedures;
- reviewing our overall risk management framework;
- overseeing procedures for the treatment of complaints on accounting, internal accounting controls, or audit matters;
- reviewing and discussing with management and the independent auditor the results of our annual audit, reviews of our quarterly financial statements and our publicly filed reports;
- reviewing and approving related person transactions; and
- preparing the audit committee report that the SEC requires in our annual proxy statement.

Compensation Committee. Messrs. Fox and Kornfeld, Dr. Joseph and Ms. Rankin, each of whom is a non-employee member of our board of directors, comprise our compensation committee, and Mr. Kornfeld chairs the committee. Our board of directors has determined that each of the members of the compensation committee meets the requirements for independence under the rules of NASDAQ and the SEC. The compensation committee is responsible for, among other things:

- reviewing the elements and amount of total compensation for all officers;
- formulating and recommending any proposed changes in the compensation of our chief executive officer for approval by the board;
- reviewing and approving any changes in the compensation for officers, other than our chief executive officer;
- administering our equity compensation plans;
- reviewing annually our overall compensation philosophy and objectives, including compensation program objectives, target pay positioning and equity compensation; and
- preparing the compensation committee report that the SEC will require in our annual proxy statement.

Nominating and Governance Committee. Mr. Major, Dr. Joseph and Ms. Cooper, each of whom is a non-employee member of our board of directors, comprise our nominating and governance committee, and Mr. Major chairs the committee. Our board of directors has determined that each of the members of the nominating and governance committee meets the requirements for independence under the rules of NASDAQ for service on this committee. The nominating and governance committee is responsible for, among other things:

- evaluating and making recommendations regarding the composition, organization and governance of our board of directors and its committees;
- identifying, recruiting and nominating director candidates to the board if and when necessary;
- evaluating and making recommendations regarding the creation of additional committees or the change in mandate or dissolution of committees;
- reviewing and making recommendations with regard to our corporate governance guidelines and compliance with laws and regulations; and
- reviewing and approving conflicts of interest of our directors and corporate officers, other than related person transactions reviewed by the audit committee.

Other Board Committees. The Board forms ad hoc committees from time-to-time to assist the Board in fulfilling its responsibilities with respect to matters that are the subject of the ad hoc committee's mandate. During 2017, the Board maintained a Strategy and Financing Committee to assist the Board by making recommendations on, and in certain cases approving, financing transactions and other initiatives that the committee believes are reasonably likely to maximize stockholder value. During 2017, the Strategy and Financing Committee was chaired by Ms. Rankin and also consisted of Ms. Cooper, Messrs. Major and Kornfeld and Drs. Hammond and Joseph.

Corporate Governance Guidelines; Code of Business Conduct and Ethics

Our board of directors has adopted Corporate Governance Guidelines. These guidelines address items such as the qualifications and responsibilities of our directors and director candidates and corporate governance policies and standards applicable to us. In addition, our board of directors has adopted a Code of Business Conduct and Ethics that applies to all of our employees, officers and directors, including our chief executive officer, chief financial officer, and other executive and senior financial officers. The full text of our Corporate Governance Guidelines and our Code of Business Conduct and Ethics is posted on the Investor Relations portion of our website at ir.resonant.com. We will post amendments to our Code of Business Conduct and Ethics or waivers of our Code of Business Conduct and Ethics for directors and executive officers on the same website.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934, as amended, requires that our executive officers and directors, and persons who own more than 10% of our common stock, file reports of ownership and changes of ownership with the SEC. Such directors, executive officers and 10% stockholders are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. SEC regulations require us to identify in this proxy statement anyone who filed a required report late during the most recent year. Based on our review of forms we received, or written representations from reporting persons stating that they were not required to file these forms, we believe that during 2017, all Section 16(a) filing requirements were satisfied on a timely basis except as follows:

- Longboard Capital Advisors, LLC filed a Form 4 on October 16, 2017, reporting late (i) the purchase by Blue Earth Fund, LP of 5,300 shares of common stock and warrants to purchase 5,300 shares of common stock, and (ii) the acquisition by Conrad Group Inc. Defined Benefit Plan of 5,300 shares of common stock and warrants to purchase 5,300 shares of common stock.

ITEM 11. EXECUTIVE COMPENSATION

Summary Compensation Table

The following table provides information regarding the compensation of our named executive officers during 2016 and 2017. As a "smaller reporting company," as such term is defined in the rules promulgated under the Securities Act of 1933, as amended, or the Securities Act, we are required to provide compensation disclosure for our principal executive officer and the two most highly compensated executive officers other than our principal executive officer. We are also providing compensation disclosure for Mr. Lingren, who served as our principal executive officer until his resignation on January 9, 2017. Throughout this proxy statement, these four officers are referred to as our "named executive officers."

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)(1)	Option Awards ($)(1)	Non-Equity Incentive Plan Compensation ($)(2)	All Other Compensation ($)(3)	Total ($)
Terry Lingren [4]	2017	34,480	—	—	—	12,500[5]	301,784[6]	348,764
Former Chief Executive Officer	2016	300,000	30,000	—	40,600	—	13,970	384,570
George Holmes [7]	2017	325,605	—	361,880	—	116,884[8]	14,250	818,619
Chief Executive Officer	2016	238,269	100,000[9]	1,011,120	—	—	5,138	1,354,527
Jeff Killian[10]	2017	276,070	—	196,200	—	115,333[11]	14,250	601,853
Chief Financial Officer and Secretary	2016	42,400	75,000[12]	918,000	—	—	132	1,035,532
Robert Hammond	2017	255,836	—	196,200	—	95,019[13]	13,988	561,043
Chief Technology Officer	2016	243,710	24,371	—	34,800	—	13,653	316,534

(1) These amounts represent the grant date fair value of the stock and stock option awards determined in accordance with ASC Topic 718. These amounts may not correspond to the actual value eventually realized by the officer, which depends in part on the market value of our common stock in future periods. Assumptions used in calculating these amounts are set forth in the Notes to Consolidated Financial Statements included in this annual report on Form 10-K for the year ended December 31, 2017.

(2) Non-equity incentive plan compensation represents incentive bonuses earned pursuant to awards granted under an incentive bonus plan which permits the compensation committee of the board, as the administrator of such plan, to settle such awards in cash, stock, options, or a combination thereof.

(3) All Other Compensation in 2017 included the following:

Name	Severance	Insurance Premiums	401(k) Matching Contributions	Total
Terry Lingren	$ 300,000	$ 60	$ 1,724	$ 301,784
George Holmes	—	750	13,500	14,250
Jeff Killian	—	750	13,500	14,250
Robert Hammond	—	488	13,500	13,988

(4) Mr. Lingren resigned as our Chief Executive Officer on January 9, 2017.

(5) This amount was settled in cash.

(6) This amount includes $300,000 paid to Mr. Lingren following his resignation as part of his severance arrangement with us.

(7) Mr. Holmes's employment with Resonant commenced on February 29, 2016, and he served as our President and Chief Commercial Officer during fiscal year 2016 and until his appointment as Chief Executive Officer on January 9, 2017.

(8) This amount was settled by delivery of (i) $68,356.50 in cash, (ii) 2,397 restricted stock units, and (iii) 13,487 stock options.

(9) Represents a signing bonus paid to Mr. Holmes upon the commencement of employment with Resonant. The signing bonus was applied against and reduced to zero the discretionary bonus Mr. Holmes otherwise would have received for fiscal year 2016. Mr. Holmes would have been required to repay the signing bonus in full if he voluntarily terminated his employment with Resonant other than for good reason prior to March 1, 2017.

(10) Mr. Killian's employment with Resonant commenced on October 24, 2016.

(11) This amount was settled by delivery of (i) $62,594.50 in cash, (ii) 2,990 restricted stock units, and (iii) 13,990 stock options.

(12) Represents a signing bonus paid to Mr. Killian upon the commencement of employment with Resonant. The signing bonus was applied against and reduced to zero the bonus Mr. Killian otherwise would have received for fiscal year 2017. Mr. Killian would have been required to repay the signing bonus in full if he voluntarily terminated his employment with Resonant other than for good reason prior to October 24, 2017.

(13) This amount was settled by delivery of (i) $48,342 in cash, (ii) 2,439 restricted stock units, and (iii) 12,769 stock options.

Narrative Disclosure to Summary Compensation Table

The compensation committee of the board is responsible for the executive compensation programs for our executive officers and reports to the board on its discussions, decisions and other actions. Typically, our chief executive officer makes recommendations to our compensation committee, often attends committee meetings and is involved in the determination of compensation for the executive officers that report to him, except that he does not make recommendations as to his own compensation. Our chief executive officer makes recommendations to our compensation committee regarding short-term and long-term compensation for all executive officers, excluding himself, based on our results, an individual executive officer's contribution toward these results and performance toward individual goal achievement. Our compensation committee then reviews the recommendations and other data and makes decisions as to total compensation for each executive officer other than the chief executive officer, as well as each individual compensation component. The compensation committee makes recommendations to the board regarding compensation for the chief executive officer. The independent members of the board make the final decisions regarding executive compensation for our chief executive officer.

Compensation Elements

Our compensation package for executive officers consists of base salary, annual incentive (bonus) awards, and long-term equity-based compensation. The executive officers are also eligible to participate in all of our employee benefit plans. We also provide in certain circumstances, a sign-on bonus to executive officers, which are applied against and reduce any other bonus to which the executive is entitled for one or more fiscal years and must be repaid if the executive officer voluntarily terminates employment with us other than for good reason within one year of commencement of employment.

Base Salary. We provide competitive base salaries to pay for day-to-day service in light of each individual's duties and responsibilities, experience, expertise and individual performance. Individual salary levels are determined based on assessments of internal job responsibilities, experience in the role, and market levels for comparable positions. Salary increases also are determined based on market levels of compensation and an assessment of individual and team performance for the year.

Annual base salaries for 2016 and 2017 for the named executive officers are as follows:

Executive		2016 Annual Base Salary		2017 Annual Base Salary
Terry Lingren (1)	$	300,000	$	—
George Holmes (2)	$	295,000	$	325,605
Jeff Killian (3)	$	275,000	$	276,070
Robert Hammond	$	250,000	$	255,836

(1) Mr. Lingren resigned as our Chief Executive Officer on January 9, 2017.

(2) Mr. Holmes's employment with Resonant commenced on February 29, 2016.

(3) Mr. Killian's employment with Resonant commenced on October 24, 2016.

Incentive (Bonus) Awards. We provide eligible employees, including our named executive officers, the opportunity to earn bonus awards upon achieving predetermined performance goals and objectives. The purpose is to reward attainment of company goals and/or individual performance objectives, with award opportunities expressed as a percentage of base salary. Bonuses can be measured and paid quarterly and/or annually, and are paid in cash, equity or a combination of cash and equity, in the discretion of our compensation committee.

2017 Incentive Bonus Program. During 2017, our executive officers, including our named executive officers, participated in the 2017 incentive bonus program. The program provided for the award of quarterly and annual bonuses to our employees and executive officers if certain performance goals, based on company-wide billings, expenses and certain other individual non-monetary targets, were attained in quarterly and annual performance periods during our 2017 fiscal year. The awards contained a combination of service conditions and performance conditions based on the achievement of specified performance thresholds. The awards were based on each individual's annual salary multiplied by a bonus multiplier percentage which had been determined by our compensation committee. The plan also allowed for additional discretionary awards to non-executive employees up to 10% of the total base salaries of non-executive employees. Additionally, the annual bonus, as it related to executive employees, was subject to the achievement of a stock price threshold for the 10 trading days ending on the last trading day of 2017, which was met. The bonuses were paid in the cash, stock options, restricted stock, and a combination thereof. The number of shares underlying equity awards granted to each employee was be determined based on the performance bonus amount to be paid in equity, divided by our closing stock price on the grant date and, in the case of stock options, multiplying the result by 1.67.

Our named executive officers received the following quarterly and annual incentive bonus awards during 2017:

Executive	First Quarter[1]	Second Quarter[2]	Third Quarter[3]	Fourth Quarter[4]	Fiscal Year[4]	Total 2017 Bonus
Terry Lingren[5]	12,500	—	—	—	—	12,500
George Holmes	23,207	15,727	21,197	29,402	27,351	116,884
Jeff Killian	28,951	17,972	20,291	24,929	23,190	115,333
Robert Hammond	23,618	18,643	16,225	15,043	21,490	95,019

(1) Payable 50% in cash and 50% in restricted stock units, except for Mr. Lingren who received 100% in cash, with the number of restricted stock units determined by dividing the total dollar amount of the bonus to be paid in restricted stock units by the closing sales price of the Corporation's common stock on the date of approval. The restricted stock units vested in full on May 16, 2017.

(2) Payable 100% in stock options, with the number of stock options determined by dividing the total dollar amount of the bonus to be paid in stock options by the closing sales price of the Corporation's common stock on the date of approval, and multiplying the result by 1.67. The stock options have a term of 10 years and vested in full on August 16, 2017.

(3) Payable 100% in stock options, with the number of stock options determined by dividing the total dollar amount of the bonus to be paid in stock options by the closing sales price of the Corporation's common stock on the date of approval, and multiplying the result by 1.67. The stock options have a term of 10 years and vested in full on November 16, 2017.

(4) Payable 100% in cash.

(5) Mr. Lingren, whose employment with us terminated on January 9, 2017, received a pro-rated bonus based on the portion of the quarter during which he was employed.

Long-term Equity Incentives. We deliver long-term incentive value through the award of stock options and restricted stock units to our employees. Awards of equity compensation are made in the discretion of our compensation committee. Employees typically receive an initial award upon joining the company, and additional awards on an annual basis.

2017 Long-term Equity Incentive Awards. Our named executive officers (other than Mr. Lingren) received the following long-term equity incentive awards during 2017:

Executive	RSUs (#)(1)
George Holmes	83,000
Jeff Killian	45,000
Robert Hammond	45,000

(1) The RSUs vest in four equal annual installments on December 1, 2017, 2018, 2019 and 2020.

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Outstanding Equity Awards at Fiscal Year End

The following table presents certain information concerning equity awards held by our named executive officers as of December 31, 2017.

		Option Awards				Stock Awards			
Name	Grant Date	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price per Share ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested (1) ($)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or other Rights That Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or other Rights That Have Not Vested (1) ($)
George Holmes	2/29/2016	—	—	—	—	108,000(2)	806,760	—	—
	4/25/2016	—	—	—	—	31,669(3)	236,567	—	—
	8/8/2016	—	—	—	—	—	—	250,000(4)	1,867,500
	10/4/2016	—	—	—	—	29,952(5)	223,741	—	—
	2/2/2017	—	—	—	—	62,250(6)	465,007	—	—
	8/7/2017	5,824(7)	—	4.51	8/7/2027	—	—	—	—
	11/6/2017	7,663(8)	—	4.62	11/6/2027	—	—	—	—
Jeff Killian	10/24/2016	—	—	—	—	150,000(9)	1,120,500	—	—
	2/2/2017	—	—	—	—	33,750(6)	252,113	—	—
	8/7/2017	6,655(7)	—	4.51	8/7/2027	—	—	—	—
	11/6/2017	7,335(8)	—	4.62	11/6/2027	—	—	—	—
Robert Hammond	12/4/2014	—	—	—	—	14,692(10)	109,749	—	—
	2/5/2016	13,125(11)	16,875(11)	1.95	2/5/2026	—	—	—	—
	2/2/2017	24,513(12)	—	4.36	2/2/2027	33,750(6)	252,113	—	—
	8/7/2017	6,904(7)	—	4.51	8/7/2027	—	—	—	—
	11/6/2017	5,865(8)	—	4.62	11/6/2027	—	—	—	—

(1) The market value of the restricted stock awards is based on the closing market price of our common stock as of December 29, 2017, which was $7.47 per share.

(2) Represents a grant of restricted stock units, of which 27,000 shares vest on each of July 1, 2016, October 1, 2016 and January 1, 2017, and 9,000 shares vest on the first business day of each subsequent calendar quarter, commencing April 1, 2017, until fully vested.

(3) Represents a grant of restricted stock units, of which 7,917 shares vest on each of July 1, 2016, October 1, 2016 and January 1, 2017, and 2,639 shares vest on the first business day of each subsequent calendar quarter, commencing April 1, 2017, until fully vested.

(4) Represents a grant of restricted stock units that are subject to performance-based vesting requirements, measured quarterly, based on the average of (a) the average high daily trading price of Resonant common stock for each trading day during the last month of the applicable calendar quarter and (b) the average low daily trading price of Resonant common stock for each trading day during the last month of the applicable calendar quarter, each as reported by The Nasdaq Stock Market, LLC (the “Applicable Share Price”). The RSUs are eligible to be earned on a quarterly basis based on a linear interpolation of the Applicable Share Price between $15 per share (0% of the RSUs) and $65 per share (100% of the RSUs). Once earned, the RSUs vest and become exercisable, if at all, (y) 50% on the date such RSUs become earned and (z) 50% on September 30, 2019.

(5) Represents a grant of restricted stock units, of which 22,465 shares vested on the date of grant, 7,489 shares vest on January 1, 2017, and 2,496 shares vest on the first business day of each subsequent calendar quarter, commencing April 1, 2017, until fully vested.

(6) Represents a grant of restricted stock units, of which 25% vests on each of December 1, 2017, December 1, 2018, December 1, 2019 and December 1, 2020.

(7) Vested 100% on August 16, 2017.

(8) Vested 100% on November 16, 2017.

(9) Represents a grant of restricted stock units, of which 12,500 vest on the first business day of calendar quarter, commencing January 2, 2017, until fully vested.

(10) Represents a grant of restricted stock units, of which 25% vests on the first business day of each of 2016, 2017, 2018 and 2019.

(11) Vests 1/16th on the first day of each calendar quarter, with the first installment vesting on April 1, 2016.

(12) Vested 100% on February 16, 2017.

Executive Officer Employment Letters

We entered into an executive employment letter, dated June 17, 2013, with each of Terry Lingren and Robert Hammond, an executive employment letter, dated February 9, 2016, with George Holmes, and an executive employment letter, dated October 6, 2017, with Jeff Killian. The letters have no specific duration and provide for at-will employment. Each of our named executive officers may be entitled to receive severance benefits under a severance and change in control agreement, as described below. Mr. Lingren, whose employment with us terminated on January 9, 2017, received the severance payments described below commencing in January 2017.

Severance and Change in Control Agreements

We have entered into severance and change in control agreements with participating employees, including our named executive officers, which provide these employees with severance benefits upon the employee's termination of employment in certain circumstances with certain additional benefits following a change in control of Resonant. These benefits provide the participating employees with enhanced financial security and incentive to remain with Resonant notwithstanding their at-will employment with us and the possibility of a change in control.

Termination Without Change in Control

If we terminate the participant's employment with Resonant for a reason other than cause, the participant becoming disabled or the participant's death, and the termination does not occur within twenty-four months immediately following a "change in control," the participant will receive the following severance benefits:

Accrued Compensation: The participant will receive all accrued but unpaid paid time off, expense reimbursements, wages, and other benefits due to the participant under any Resonant -provided plans, policies, and arrangements.

Severance Payment: The participant will receive severance in an amount equal to eighteen (18) months of the participant's base salary then in effect, immediately prior to the date of the participant's termination of employment, less all required tax withholdings and other applicable deductions, payable as soon as practicable following the participant's termination of employment.

Target Bonus Payment: The participant will receive a lump-sum severance payment equal to 100% of the participant's full target bonus as in effect for the fiscal year in which the termination occurs, which amount for all participants other than the CEO will be pro-rated for the portion of the fiscal year that the participant was employed by us.

Continued Health Insurance Benefits: We will reimburse the participant for premiums for coverage of the participant and his or her eligible dependents pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA") (at the coverage levels in effect immediately prior to termination of employment) until the earliest to occur of (A) a period of twelve (12) months from the last date of employment with us, (B) the date upon which the participant becomes eligible for coverage under a health, dental, or vision insurance plan of a subsequent employer, and (C) the date the participant or his or her dependents cease to be eligible for COBRA coverage.

Equity: All of the participant's unvested and outstanding equity awards that would have become vested had the participant remained in our employ for the twelve (12) month period following termination of employment shall immediately vest and become exercisable as of the date of termination, and the participant will have six months following termination of employment in which to exercise any stock options, stock appreciation rights, or similar rights to acquire our common stock.

Outplacement Benefits. If requested by the participant, we will pay the expense for outplacement benefits provided by a service to be determined by us for a period of six (6) months, up to a maximum dollar value of five thousand dollars ($5,000) per participant.

Termination Following Change in Control

If during the twenty-four (24) month period immediately following a change in control of Resonant, (x) we terminate the participant's employment with us for a reason other than cause, the participant becoming disabled or the participant's death, or (y) the participant resigns his employment for good reason, then the participant will receive the following benefits from us in lieu of the benefits described above under "*Termination Without Change in Control*":

Accrued Compensation: The participant will receive all accrued but unpaid paid time off, expense reimbursements, wages, and other benefits due to the participant under any Resonant -provided plans, policies, and arrangements.

Severance Payment: The participant will receive a lump sum severance in an amount equal to eighteen (18) months of the participant's base salary then in effect.

Target Bonus Payment: The participant will receive a lump sum severance payment equal to 100% of the participant's full target bonus for the fiscal year in effect at the date of such termination of employment (or, if greater, as in effect for the fiscal year in which the change in control occurs).

Continued Health Insurance Benefits: We will reimburse the participant for premiums for coverage of the participant and his or her eligible dependents pursuant to the COBRA (at the coverage levels in effect immediately prior to termination of employment) until the earliest to occur of (A) a period of twelve (12) months from the last date of employment with us, (B) the date upon which the participant becomes eligible for coverage under a health, dental, or vision insurance plan of a subsequent employer, and (C) the date the participant or his or her dependents cease to be eligible for COBRA coverage.

Equity: All of the participant's unvested and outstanding equity awards shall immediately vest and become exercisable as of the date of termination, and the participant will have six (6) months following termination of employment in which to exercise any stock options, stock appreciation rights, or similar rights to acquire our common stock.

Outplacement Benefits. If requested by the participant, we will pay the expense for outplacement benefits provided by a service to be determined by us for a period of six (6) months, up to a maximum dollar value of five thousand dollars ($5,000) per participant.

Pension Benefits and Nonqualified Deferred Compensation

We do not provide a pension plan for our employees, and none of our named executive officers participated in a nonqualified deferred compensation plan in 2017.

401(k) Plan

We maintain a tax-qualified retirement plan, or the 401(k) plan, that provides eligible employees with an opportunity to save for retirement on a tax-advantaged basis. Eligible employees are able to participate in the 401(k) plan as of the first day of the month following the date they meet the 401(k) plan's eligibility requirements, and participants are able to defer up to 100% of their eligible compensation subject to applicable annual Code limits. All participants' interests in their deferrals are 100% vested when contributed. The 401(k) plan permits us to make matching contributions and profit sharing contributions to eligible participants. We have implemented a matching program, which is limited to 5% of base salary. In 2017, we made matching contributions of $284,000 into the plan.

Non-Employee Director Compensation

Director Compensation Table

The following table details the total compensation earned by our non-employee directors in fiscal year 2017:

Director	Fees Earned or Paid in Cash	Stock Awards (1)(2)(3)	All Other Compensation	Total
Janet Cooper	$ 50,000	$ 49,996	$ —	$ 99,996
Michael Fox	$ 50,000	$ 49,996	$ —	$ 99,996
Thomas Joseph	$ 50,000	$ 49,996	$ 25,693 (4)	$ 125,689
Richard Kornfeld	$ 50,000	$ 49,996	$ —	$ 99,996
John Major	$ 75,000	$ 74,992	$ —	$ 149,992
Jean Rankin	$ 12,500	$ 105,360	$ —	$ 117,860

(1) Represents awards of restricted stock units, each of which entitles the director to receive one share of our common stock at the time of vesting, without the payment of an exercise price or other cash consideration.

(2) These amounts represent the grant date fair value of the stock awards granted in fiscal year 2017 determined in accordance with ASC Topic 718. These amounts may not correspond to the actual value eventually realized by the director, which depends in part on the market value of our common stock in future periods. Assumptions used in calculating these amounts are set forth in the Notes to Consolidated Financial Statements included in this annual report on Form 10-K for the year ended December 31, 2017.

(3) On June 6, 2017, upon their reelection to the board, each of Ms. Cooper, Messrs. Kornfeld and Fox and Dr. Joseph received an award of restricted stock units for 11,627 shares of our common stock, and Mr. Major received an award of restricted stock units for 17,440 shares of our common stock, which awards vest and settle 50% on the earlier of the day prior to the first annual meeting of stockholders following the grant and June 6, 2018, and 50% on the earlier of the day prior to the second annual meeting of stockholders following the grant and June 6, 2019. On July 5, 2017, in connection with her initial appointment to the board, Ms. Rankin received an award of restricted stock units for 24,000 shares of our common stock, which award vests and settles 50% on each of July 3, 2018 and July 3, 2019. As of December 31, 2017, the non-employee directors held restricted stock units for the following number of shares of our common stock: Ms. Cooper - 17,594; Mr. Fox - 29,594; Dr. Joseph - 17,594; Mr. Kornfeld - 17,594; Mr. Major - 26,390; and Ms. Rankin - 24,000. Restricted stock units generally vest in two installments of 50% each on the first and second anniversaries of the date of grant.

(4) Consists of fees for consulting services provided by Dr. Joseph during fiscal year 2017.

Outside Director Compensation Policy

Our board of directors has adopted a policy for the compensation for our non-employee directors, or the Outside Directors. Outside Directors will receive compensation in the form of equity granted under the terms of the Resonant Inc. Amended and Restated 2014 Omnibus Incentive Plan, as amended to date (the "2014 Plan") and cash, as described below:

Initial award to Outside Directors. Each person who first becomes an Outside Director will be granted 24,000 restricted stock units, or the Initial RSU Award. These awards will be granted on the date of the first meeting of our board of directors or compensation committee occurring on or after the date on which the individual first became an Outside Director or commenced service as chairman or lead independent director. The shares underlying the Initial RSU Award will vest as to one-half of the shares subject to such award on each of the first and second anniversary of the commencement of the individual's service as an Outside Director, subject to continued service as a director through the applicable vesting date. If a director's status changes from an employee director to an Outside Director, he or she will not receive an Initial RSU Award.

Initial award to chairman or lead independent director. An Outside Director, upon first becoming chairman of the board or lead independent director, will be granted a restricted stock unit with a grant date fair value equal to $25,000, pro-rated based on the number of days remaining from the date on which such Outside Director first becomes chairman or lead independent director until the first anniversary of our last annual meeting of stockholders. One-half of the shares underlying this award will vest on the earlier of (i) the day prior to the first annual meeting of stockholders following the grant or (ii) one year from grant, and one-half of the shares underlying this award will vest on the earlier of (i) the day prior to the second annual meeting of stockholders following the grant or (ii) two years from grant, subject to continued service as chairman of the board and/or lead independent director through the applicable vesting date.

Annual award to Outside Directors. On the date of each annual meeting of our stockholders, each Outside Director who has served on our board of directors for at least the preceding six months will be granted restricted stock units with a grant date fair value equal to $50,000, or the Annual RSU Award. One-half of the shares underlying the Annual RSU Award will vest on the earlier of (i) the day prior to the first annual meeting of stockholders following the grant or (ii) one year from grant, and one-half of the shares underlying the Annual RSU Award will vest on the earlier of (i) the day prior to the second annual meeting of stockholders following the grant or (ii) two years from grant, subject to continued service as a director through the applicable vesting date.

Annual award to chairman or lead independent director. On the date of each annual meeting of our stockholders, an Outside Director who has served as chairman of the board or lead independent director for at least the preceding six months will be granted, in addition to the Annual RSU Award, restricted stock units with a grant date fair value equal to $25,000. One-half of the shares underlying this award will vest on the earlier of (i) the day prior to the first annual meeting of stockholders following the grant or (ii) one year from grant, and one-half of the shares underlying this award will vest on the earlier of (i) the day prior to the second annual meeting of stockholders following the grant or (ii) two years from grant, subject to continued service as chairman of the board and/or lead independent director through the applicable vesting date.

Cash compensation. Each Outside Director receives an annual retainer of $50,000 in cash for serving on our board of directors, or the Annual Fee. The Outside Director who serves as chairman of the board or lead independent director will receive an additional annual cash retainer of $25,000. The Annual Fee is paid in quarterly installments to each Outside Director who has served in the relevant capacity for the immediately preceding fiscal quarter no later than 30 days following the end of such preceding fiscal quarter. An Outside Director who has served in the relevant capacity for only a portion of the immediately preceding fiscal quarter will receive a prorated payment of the quarterly payment of the Annual Fee.

Consulting Arrangement with Thomas Joseph

In addition to his services as a member of our board of directors, Dr. Joseph provided engineering design and fabrication advisory services to us during 2016 and 2017 for which he was separately compensated at an hourly rate of $175, not to exceed $119,999 in the aggregate during any twelve month period. During fiscal year 2017, Dr. Joseph earned $25,693 for advisory services. Our advisory services arrangement with Dr. Joseph terminated in April of 2017.

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

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth certain information with respect to the beneficial ownership of our common stock for:

- each of our named executive officers;
- each of our directors;
- all of our executive officers and directors as a group; and
- each person, or group of affiliated persons, who beneficially owned more than 5% of our common stock.

We have determined beneficial ownership in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Except as indicated by the footnotes below, we believe, based on information furnished to us, that the persons and entities named in the table below have sole voting and sole investment power with respect to all shares of common stock that they beneficially owned, subject to applicable community property laws.

The information for each beneficial owner is as of February 26, 2018, unless otherwise indicated for greater than five percent (5%) stockholders who are not officers or directors of Resonant. We have based percentage ownership of our common stock on 19,911,602 shares of our common stock outstanding as of February 26, 2018. In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of such person, we deemed to be outstanding all shares of common stock subject to options held by the person that are currently exercisable or exercisable within 60 days of February 26, 2018, as well as all shares of common stock issuable pursuant to restricted stock units held by the person that are subject to vesting conditions expected to occur within 60 days of February 26, 2018. However, we did not deem such shares outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Resonant Inc., 110 Castilian Drive, Suite 100, Goleta, California 93117.

Name of Beneficial Owner	Common Stock Beneficially Owned	
	Number	Percentage
Named Executive Officers and Directors:		
Terry Lingren (1)	488,235	2.5%
George Holmes (2)	281,574	1.4%
Jeff Killian (3)	72,940	*
Robert Hammond (4)	502,974	2.5%
Janet Cooper (5)	57,561	*
Michael Fox (6)	1,421,367	7.0%
Thomas Joseph (7)	29,967	*
Richard Kornfeld (8)	82,561	*
John Major (9)	139,071	*
Jean Rankin	—	*
All executive officers and directors as a group (10 persons)(10)	3,076,250	15%
Other 5% Stockholders:		
Peter A. Appel (11)	1,930,094	9.7%
Park City Capital Offshore Master, Ltd (12)	1,370,000	6.8%
Longboard Capital Advisors, LLC (13)	4,229,259	21.2%

*Represents beneficial ownership of less than one percent.

(1) Consists of (i) 483,235 shares of common stock and (ii) 5,000 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable.

(2) Consists of (i) 203,247 shares of common stock, (ii) 8,300 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable, (iii) 13,487 shares of common stock that may be acquired from us upon exercise of stock options that are exercisable within 60 days of February 26, 2018, and (iv) 42,405 shares of common stock that may be acquired from us upon vesting of restricted stock units within 60 days of February 26, 2018.

(3) Consists of (i) 46,450 shares of common stock, (ii) 13,990 shares of common stock that may be acquired from us upon exercise of stock options that are exercisable within 60 days of February 26, 2018, and (iii) 12,500 shares of common stock that may be acquired from us upon vesting of restricted stock units within 60 days of February 26, 2018.

(4) Consists of (i) 443,817 shares of common stock, (ii) 5,000 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable, and (iii) 54,157 shares of common stock that may be acquired from us upon exercise of stock options that are exercisable within 60 days of February 26, 2018.

(5) Consists of 57,561 shares of common stock.

(6) Consists of (i) 40,667 shares of common stock, (ii) 10,700 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable, (iii) 1,035,000 shares of common stock owned by Park City Capital Offshore Master Ltd., and (iv) 335,000 shares of common stock that may be acquired by Park City Capital Offshore Master Ltd. from us upon exercise of warrants that currently are exercisable. Michael Fox, the managing member of Park City Capital, LLC, the investment manager of Park City Capital Offshore Master Ltd., has voting and dispositive power with respect to securities owned by Park City Capital Offshore Master Ltd.

(7) Consists of 29,967 shares of common stock.

(8) Consists of (i) 62,561 shares of common stock and (ii) 20,000 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable.

(9) Consists of (i) 105,571 shares of common stock and (ii) 33,500 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable.

(10) Consists of (i) 2,508,076 shares of common stock, (ii) 417,500 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable, (iii) 81,634 shares of common stock subject to options that are currently exercisable or exercisable within 60 days of February 26, 2018, and (iv) 69,040 shares of common stock issuable pursuant to restricted stock units that are subject to vesting conditions expected to occur within 60 days of February 26, 2018.

(11) Consists of (i) 335,000 shares of common stock, (ii) 335,000 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable, and (iii) 1,260,094 shares of common stock owned by Lone Wolf Holdings, LLC. Peter Appel exercises voting and investment authority over the shares held by Lone Wolf Holdings, LLC. The address for Mr. Appel is 77 Oregon Road, Bedford Corners, NY 10549.

(12) Consists of (i) 1,035,000 shares of common stock and (ii) 335,000 shares of common stock that may be acquired from us upon exercise of warrants that currently are exercisable. Michael Fox has voting and dispositive power with respect to these securities. The address for Park City Capital, LLC is 100 Crescent Court, Suite 700, Dallas, TX 75201.

(13) Based on information set forth in a Schedule 13D/A filed with the SEC on February 5, 2018 by Longboard Capital Advisors, LLC ("Longboard") and Brett Conrad. Consists of shares of common stock owned by Blue Earth Fund, LP, Grayboard Investments, Ltd, Ptarmagin, LLC and Conrad Group Inc. Defined Benefit Plan (the "Longboard Entities"). Longboard, with Brett Conrad as its sole managing member, is the investment manager of the Longboard Entities or separate investment accounts or plans maintained by the Longboard Entities, and thus Longboard and Mr. Conrad possess the power to vote and/or dispose or direct the disposition of all shares owned by the Longboard Entities. The address for Longboard is 1312 Cedar Street, Santa Monica, California 90405.

Equity Compensation Plan Information

The following table summarizes certain information about our equity compensation plans as of December 31, 2017.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted Average Exercise Price of Outstanding Options, Warrants and Rights (b)(1)	Number 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 (2)	2,249,679	$ 4.87	2,863,546
Equity compensation plans not approved by security holders	309,669	--	--
Total	2,559,348	$ 4.87	2,863,546

(1) The weighted average exercise price is calculated based solely on outstanding stock options. It does not take into account restricted stock units, which have no exercise price.

(2) Consists of the Amended and Restated 2014 Omnibus Incentive Plan, as amended.

Material Features of Equity Compensation Plans not Approved by Stockholders

2016 Inducement Awards Executives. During 2016, our board of directors approved the award to newly hired executive officers of the following restricted stock units for shares of our common stock as an inducement to the executive's entering into employment with us:

- We granted to George B. Holmes an inducement award of restricted stock units for 216,000 shares of common stock on February 29, 2016, which restricted stock unit award vested 27,000 shares on the date of grant and on each of July 1, 2016, October 1, 2016 and January 1, 2017, 9,000 shares vested on April 1, 2017, and 9,000 shares will vest on the first business day of each subsequent calendar quarter, commencing July 1, 2017, until fully vested. As of December 31, 2017, 108,000 shares remained reserved for issuance pursuant to this award.

- We granted to George B. Holmes an inducement award of restricted stock units for 63,337 shares of common stock on April 25, 2016, which restricted stock unit award vested 7,917 shares on the date of grant and on each of July 1, 2016, October 1, 2016 and January 1, 2017, 2,639 shares vested on April 1, 2017, and 2,639 shares will vest on the first business day of each subsequent calendar quarter, commencing July 1, 2017, until fully vested. As of December 31, 2017, 31,669 shares remained reserved for issuance pursuant to this award.

- We granted to Jeff Killian an inducement award of restricted stock units for 200,000 shares of common stock on October 24, 2016, which restricted stock unit award vested 12,500 shares on January 2, 2017, and 12,500 shares will vest on the first business day of each subsequent calendar quarter, commencing April 1, 2017, until fully vested. As of December 31, 2017, 150,000 shares remained reserved for issuance pursuant to this award.

Equity Award to Investor Relations Firm. On December 21, 2017, we issued a restricted stock unit for an aggregate of 20,000 shares of common stock to MZHCI, LLC, an MZ Group Company, as partial consideration for investor relations advisory services to be rendered by MZ Group, which restricted stock unit award vested 6,666 shares on January 2, 2018, and 6,667 shares will vest on each of April 2, 2018 and July 2, 2018 so long as MZ Group continues to provide investor relations advisory services to us.

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

Reportable Related Party Transactions

We describe below transactions, and series of related transactions, since January 1, 2016 to which we were or will be a party, in which:

- the amounts involved exceeded or will exceed $120,000; and

- any of our directors, executive officers, or beneficial holders of more than 5% of any class of our capital stock, or their immediate family members, had or will have a direct or indirect material interest.

Other than as described below, there has not been, nor is there any currently proposed, transaction or series of related transactions to which we have been or will be a party other than compensation arrangements, which are described under "*Item 11. Executive Compensation.*"

Indemnification Agreements

We have entered into indemnification agreements with each of our current directors, executive officers and certain key employees. The indemnification agreements and our amended and restated certificate of incorporation and amended and restated bylaws require us to indemnify our directors and officers to the fullest extent permitted by Delaware law.

Policies and Procedures for Related Party Transactions

Our audit committee has the primary responsibility for reviewing and approving or disapproving "related party transactions," which are transactions between us and related persons in which the aggregate amount involved exceeds or may be expected to exceed $120,000 and in which a related person has or will have a direct or indirect material interest. Our policy regarding transactions between us and related persons provides that a related person is defined as a director, executive officer, nominee for director or greater than 5% beneficial owner of our common stock, in each case since the beginning of the most recently completed year, and any of their immediate family members. Our audit committee charter provides that our audit committee shall review and approve or disapprove any related party transactions.

Director Independence

Our common stock is listed on the NASDAQ Capital Market. Under the rules of NASDAQ, independent directors must comprise a majority of a listed company's board of directors. In addition, the rules of NASDAQ require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and governance committees be independent. Under the rules of NASDAQ, a director will only qualify as an ''independent director'' if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

Our board of directors has undertaken a review of the independence of each director and considered whether each director has a material relationship with us that could compromise such director's ability to exercise independent judgment in carrying out his or her responsibilities. As a result of this review, our board of directors has determined that Messrs. Fox, Kornfeld and Major, Dr. Joseph and Mss. Cooper and Rankin are ''independent directors'' as defined under the applicable rules and regulations of the SEC and the listing requirements and rules of NASDAQ. In making its determination, the Board considered that Dr. Joseph provided engineering design and fabrication advisory services to us during 2016 and 2017 for which he was separately compensated, earning $41,806 and $25,693 during 2016 and 2017, respectively. Our advisory services arrangement with Dr. Joseph terminated in April of 2017.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Fees Paid to Independent Registered Public Accounting Firms

The following table presents fees for professional audit services and other services rendered to us by Crowe Horwath LLP, our independent registered public accounting firm, for the fiscal years ended December 31, 2017 and 2016.

	2017	2016
Audit Fees (1)	$ 192,013	$ 210,846
Audit-Related Fees (2)	36,798	106,000
Tax Fees (3)	—	—
All Other Fees	—	—
Total Fees	$ 228,811	$ 316,846

(1) "Audit Fees" consist of fees for professional services rendered in connection with the audit of our annual consolidated financial statements, including audited financial statements presented in our From 10-K for the years ended December 31, 2016 and 2017, review of our quarterly financial statements presented in our quarterly reports during 2016 and 2017, and services that are normally provided by our independent registered public accounting firm in connection with statutory and regulatory filings or engagements for those fiscal years.

(2) "Audit-Related Fees" consist of fees for professional services that are reasonably related to the performance of the audit or review of the company's financial statements. Audit-related fees also consisted of fees for professional services rendered in connection with the registration of shares pursuant to our registration statements on Form S-3 and Form S-8 that we filed with the SEC during the fiscal year.

(3) "Tax Fees" consist of professional services rendered in connection with tax audits, tax compliance, and tax consulting and planning.

Audit Committee Policy on Pre-Approval of Audit and Permissible Non-Audit Services

Consistent with requirements of the SEC and the Public Company Accounting Oversight Board, or PCAOB, regarding auditor independence, our audit committee is responsible for the appointment, compensation and oversight of the work of our independent registered public accounting firm. In recognition of this responsibility, our audit committee has a policy for the pre-approval of all audit and permissible non-audit services provided by the independent registered public accounting firm. These services may include audit services, audit-related services, tax services and other services.

Before engagement of the independent registered public accounting firm for the next fiscal year's audit, the independent registered public accounting firm submits to the audit committee for approval a detailed description of services expected to be rendered during that year for each of the following categories of services:

- *Audit services*. Audit services include the annual financial statement audit (including required quarterly reviews) and other procedures required to be performed by the independent auditor to form an opinion on our consolidated financial statements. Audit services also include, as necessary, the attestation engagement for the independent auditor's report on management's report on internal controls for financial reporting. Other audit services may include services associated with SEC registration statements, periodic reports and other documents filed with the SEC.
- *Audit-related services*. Audit-related services are assurance and related services that are reasonably related to the performance of the audit or review of our financial statements or that are traditionally performed by the independent auditor.
- *Tax Services*. Tax services include services related to tax compliance, tax planning and tax advice.
- *All Other Services*. All other services are those services not described in the other categories that are not prohibited by SEC rules.

The audit committee pre-approves particular services or categories of services on a case-by-case basis. During the year, circumstances may arise when it may become necessary to engage the independent registered public accounting firm for additional services not contemplated in the original pre-approval. In those instances, the services must be pre-approved by the audit committee, or as permitted, the audit committee chair, before the independent registered public accounting firm is engaged. Pre-approval fee levels or budgeted amounts for all services to be provided by the independent registered public accounting firm are established annually by the audit committee. Any proposed services exceeding these levels or amounts require specific pre-approval by the audit committee, or the audit committee chair. All fees paid to Crowe Horwath for the fiscal years ended December 31, 2017 and 2016 were pre-approved by the audit committee in accordance with the process described in the policy above.

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PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

We have filed the following documents as part of this Annual Report on Form 10-K:

1. Consolidated Financial Statements

   Our consolidated financial statements are listed in the “Index to Consolidated Financial Statements” under Part II, Item 8 of this Annual Report on Form 10-K.

2. Financial Statement Schedules

   All schedules have been omitted because they are not required, not applicable, not present in amounts sufficient to require submission of the schedule, or the required information is otherwise included in our consolidated financial statements and related notes.

3. Exhibits

   The following exhibits are filed as part of this Annual Report on Form 10-K.

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File Number	Exhibit	Filing Date	
2.1	Share Purchase Agreement, dated July 6, 2016, between the Registrant and Victor Plessky	8-K	001-36467	2.1	7/8/2016	
3.1	Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-36467	3.1	6/5/2014	
3.2	Amended and Restated Bylaws of the Registrant	8-K	001-36467	3.2	6/5/2014	
4.1	Form of the Registrant’s common stock certificate	S-1/A	333-193552	4.1	4/11/2014	
4.2	Form of Underwriter’s Warrant	S-1/A	333-193552	4.2	5/16/2014	
4.3	Form of Warrant, dated April 25, 2016	8-K	001-36467	10.3	4/26/2016	
4.4	Form of Agent Warrant, dated April 25, 2016	8-K	001-36467	10.4	4/26/2016	
4.5	Form of Underwriter’s Warrant	8-K	001-36467	4.1	9/9/2016	
4.6	Amended and Restated Warrant to Purchase Common Stock, dated November 15, 2013, issued by the Registrant in favor of MDB Capital Group LLC for 222,222 shares of common stock	S-1	333-193552	10.25	1/24/2014	
4.7	Amended and Restated Warrant to Purchase Common Stock, dated November 15, 2013, issued by the Registrant in favor of MDB Capital Group LLC for a to-be-determined number of shares of common stock	S-1	333-193552	10.26	1/24/2014	
4.8	Warrant Agreement issued to Investors Relations Consultant	10-K	001-36467	10.40	3/27/2015	
4.9	Warrant to Purchase Common Stock, dated February 22, 2017, issued by the Registrant to Grayboard Investments, Ltd.	8-K	001-36467	10.3	2/24/2017	
4.10	Form of Warrant issued to investors	8-K	001-36467	10.3	9/29/2017	
4.11	Placement Agent Warrant, dated September 28, 2017	8-K	001-36467	10.4	9/29/2017	
4.12	Placement Agent Warrant, dated October 2, 2017	8-K	001-36467	10.1	10/3/2017	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File Number	Exhibit	Filing Date	
10.1*	Form of Indemnification Agreement between the Registrant and each of its directors and officers	S-1	333-193552	10.1	1/24/2014	
10.2.1*	Registrant’s Amended and Restated 2014 Omnibus Incentive Plan	S-1/A	333-193552	10.2	4/11/2014	
10.2.2*	Amendment No. 1 to Registrant’s Amended and Restated 2014 Omnibus Incentive Plan	S-8	333-211893	10.1	6/7/2016	
10.2.3*	Amendment No. 2 to Registrant’s Amended and Restated 2014 Omnibus Incentive Plan	S-8	333-218542	10.3	6/7/2017	
10.3*	Offer Letter between the Registrant and Robert Hammond, dated June 17, 2013	S-1	333-193552	10.4	1/24/2014	
10.4*	Offer Letter between the Registrant and Neal Fenzi, dated June 17, 2013	S-1	333-193552	10.5	1/24/2014	
10.5*	Offer Letter between the Registrant and George B. Holmes, dated February 9, 2016	8-K	001-36467	10.1	3/4/2016	
10.6*	Offer Letter between the Registrant and Jeffrey Killian, dated October 6, 2016	8-K	001-36467	10.1	10/12/2016	
10.7*	Form of Severance/Change-in-Control Agreement	10-K	001-36467	10.41	3/27/2015	
10.8*	Restricted Stock Unit Agreement, with a grant date of February 29, 2016 between the Registrant and George B. Holmes	8-K	001-36467	10.2	3/4/2016	
10.9*	Restricted Stock Unit Agreement, with a grant date of April 25, 2016, between the Registrant and George B. Holmes	S-8	333-211894	10.2	6/7/2016	
10.10*	Restricted Stock Unit Agreement, with a grant date of August 8, 2016, between the Registrant and George B. Holmes	8-K	001-36467	10.1	8/12/2016	
10.11*	Restricted Stock Unit Agreement, with a grant date of October 24, 2016, between the Registrant and Jeff A. Killian	S-8	333-214571	10.1	11/10/2016	
10.12*	Outside Director Compensation Policy	10-K	001-36467	10.6	3/25/2016	
10.13*	Separation Agreement, dated July 28, 2016, between John Philpott and the Registrant	10-Q	001-36467	10.1	11/10/2016	
10.14*	Letter Agreement, dated July 26, 2016, between Bridgepoint Consulting and the Registrant	10-Q	001-36467	10.2	11/10/2016	
10.15.1	Multi-Tenant Industrial Lease, dated August 9, 2013, between the Registrant and Nassau Land Company, L.P.	S-1	333-193552	10.33	1/24/2014	
10.15.2	First Amendment to Lease, dated March 20, 2014, between Registrant and Nassau Land Company, L.P.	10-K	001-36467	10.33.2	3/27/2015	
10.15.3	Second Amendment to Lease, dated September 15, 2014, between Registrant and Nassau Land Company, L.P.	10-K	001-36467	10.33.3	3/27/2015	
10.15.4	Third Amendment to Lease, dated June 1, 2016, between Registrant and Nassau Land Company, L.P.	10-K	001-36467	10.15.4	3/30/2017	
10.15.5	Forth Amendment to Lease, dated June 1, 2016, between Registrant and Nassau Land Company, L.P.	10-K	001-36467	10.15.5	3/30/2017	

Exhibit Number	Exhibit Description	Incorporated by Reference Form	File Number	Exhibit	Filing Date	Filed Herewith
10.16	Standard Multi-Tenant Office Lease - Gross, dated December 16, 2016, between the Registrant and SeaBreeze I Venture - TIC.	8-K	001-36467	10.1	1/6/2017	
10.17	Securities Purchase Agreement, dated April 20, 2016, between the Registrant and the Investors listed on the schedule of buyers attached thereto	8-K	001-36467	10.1	4/26/2016	
10.18	Registration Rights Agreement, dated April 25, 2016	8-K	001-36467	10.2	4/26/2016	
10.19	Registration Rights Agreement for Investors, dated June 17, 2013, by and among the Registrant and the persons listed on Schedule A thereto	S-1	333-193552	10.23	1/24/2014	
10.20	Registration Rights Agreement for Warrants, dated June 17, 2013, by and among the Registrant and MDB Capital Group LLC	S-1	333-193552	10.24	1/24/2014	
10.21	Securities Purchase Agreement, dated February 20, 2017, between the Registrant and Grayboard Investments, Ltd.	8-K	001-36467	10.1	2/24/2017	
10.22	Registration Rights Agreement, dated February 20, 2017, between the Registrant and Grayboard Investments, Ltd.	8-K	001-36467	10.2	2/24/2017	
10.23	Securities Purchase Agreement, dated September 25, 2017, among the Registrant and the investors identified therein	8-K	001-36467	10.1	9/29/2017	
10.24	Registration Rights Agreement, dated September 28, 2017, among the Registrant and the investors identified therein	8-K	001-36467	10.2	9/29/2017	
10.25	Warrant Exercise Agreement, dated as of December 19, 2017, by and between the Registrant and Grayboard Investments, Ltd.	8-K	001-36467	10.1	12/26/2017	
10.26*	Amended and Restated Severance and Change in Control Agreement, dated as of December 21, 2017, by and between the Registrant and George B. Holmes	8-K	001-36467	10.2	12/26/2017	
21.1	List of Subsidiaries	10-K	001-36467	21.1	3/30/2017	
23.1	Consent of Crowe Horwath LLP					X
24.1	Power of Attorney (included on signature page)					X
31.1	Certification of Principal Executive Officer Pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Principal Financial Officer Pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X

Exhibit Number	Exhibit Description	Incorporated by Reference Form	File Number	Exhibit	Filing Date	Filed Herewith
32.1#	Certification of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101.INS	XBRL Instance Document					X
101.SCH	XBRL Taxonomy Extension Schema Document					X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					X

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

Dated: February 27, 2018	**Resonant Inc.**
	By: /s/ JEFF A. KILLIAN
	JEFF A. KILLIAN
	Chief Financial Officer
	(Principal Financial and Accounting Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints George B. Holmes and Jeff A. Killian, and each of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution for him or her, and in his or her name in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, and any of them or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ George B. Holmes George B. Holmes	Chief Executive Officer and Director *(Principal Executive Officer)*	February 27, 2018
/s/ Jeff A. Killian Jeff A. Killian	Chief Financial Officer *(Principal Financial and Accounting Officer)*	February 27, 2018
/s/ Robert B. Hammond Robert B. Hammond	Chief Technology Officer and Director	February 27, 2018
/s/ John E. Major John E. Major	Chairman of the Board of Directors	February 27, 2018
/s/ Janet K. Cooper Janet K. Cooper	Director	February 27, 2018
/s/ Michael J. Fox Michael J. Fox	Director	February 27, 2018
/s/ Thomas R. Joseph Thomas R. Joseph	Director	February 27, 2018
/s/ Rick Kornfeld Rick Kornfeld	Director	February 27, 2018
/s/ Jean Rankin Jean Rankin	Director	February 27, 2018

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statements No. 333-196344, 333-211893, 333-211894, 333-214571 and 333-218542 on Form S-8 and in Registration Statements No. 333-211374, 333-211375, 333-217255 and 333-221089 on Form S-3 of Resonant Inc. of our report dated February 28, 2018 relating to the consolidated financial statements appearing in this Annual Report on Form 10-K.

/s/ Crowe Horwath LLP

Sherman Oaks, California

February 27, 2018

Exhibit 31.1

Certification of Principal Executive Officer Pursuant To
Exchange Act Rules 13a-14(a) and 15d-14(a),
As Adopted Pursuant To
Section 302 of Sarbanes-Oxley Act of 2002

I, George B. Holmes, certify that:

1. I have reviewed this Annual Report on Form 10-K of Resonant Inc.;

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

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: February 27, 2018

/s/ George B. Holmes
George B. Holmes
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

**Certification of Principal Financial Officer Pursuant To
Exchange Act Rules 13a-14(a) and 15d-14(a),
As Adopted Pursuant To
Section 302 of Sarbanes-Oxley Act of 2002**

I, Jeff A. Killian, certify that:

1. I have reviewed this Annual Report on Form 10-K of Resonant Inc.;

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

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: February 27, 2018

/s/ Jeff A. Killian

Jeff A. Killian
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

Certifications of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant To Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. 1350), George B. Holmes, Chief Executive Officer (Principal Executive Officer) and Jeff A. Killian, Chief Financial Officer (Principal Financial and Accounting Officer) of Resonant Inc. (the "Company"), hereby certifies that, to the best of his knowledge:

1. Our Annual Report on Form 10-K for the year ended December 31, 2017, to which this Certification is attached as Exhibit 32.1 (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: February 27, 2018

/s/ George B. Holmes
George B. Holmes
Chief Executive Officer
(Principal Executive Officer)

/s/ Jeff A. Killian
Jeff A. Killian
Chief Financial Officer
(Principal Financial and Accounting Officer)