Resonant Inc
Form 10-K
March 27, 2015
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2014

OR

o 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 o No x

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

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 x No o

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 x No o

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. o

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

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

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

As of June 30, 2014, the aggregate market value of the voting and non-voting common equity held by non-affiliates was $33 million, based on the closing price on that date. As of March 25, 2015, the registrant had 7,158,276 shares of common stock issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant s Proxy Statement for the registrant s 2015 Annual Meeting of Stockholders are incorporated by reference in Part III of this Annual Report on Form 10-K. Such Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of December 31, 2014, the last day of the fiscal year covered by this Annual Report on Form 10-K.

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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 futu 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 IPO and the expected duration of our capital resources;*
- *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;*

- *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;*

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

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

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- *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.

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PART I

ITEM 1. BUSINESS

Overview

Resonant is a late-stage development company creating innovative filter designs for radio frequency, or RF, front-ends for the mobile device industry. The RF front-end is the circuitry in a mobile device responsible for analog signal processing and is located between the device s antenna and its digital baseband. We use a fundamentally new technology called 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. We are using ISN to develop new classes of filter designs.

We believe licensing our designs is the most direct and effective means of delivering our solutions to the market. Our target customers make part or all of the RF front-end. We intend to retain ownership of our designs, and we expect to be compensated through license fees and royalties based on sales of RF front-end modules 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.

We are currently developing our first filter design, a duplexer, for our first customer, a leading manufacturer of RF front-ends for mobile devices. Duplexers are two filters combined into a single component which simultaneously select both the transmit and receive signals. The customer has an option to license our duplexer design at already agreed-upon royalty rates upon completion. The terms of the license would give the customer exclusivity on our filter designs for a limited time on the relevant duplexer band.

We have delivered a completed duplexer design for consideration to our first customer. Our design does not meet all the specifications in the development agreement, however, we believe our design delivers competitive performance and is competing with other products. The customer is evaluating it, and there is no assurance that our design has acceptable performance and therefore will be used. Even if it has acceptable performance, there are a number of other considerations influencing the customer s decision whether to use our design, many of which are beyond our control.

On March 9, 2015, we announced a development project with a second customer for the design of our next single-band RF filter. The goal of the project is to develop a new duplexer design for our customer to market to RF front-end manufacturers and mobile device OEMs. The design, which is estimated to take less than a year to develop, is intended to replace a BAW (bulk acoustic wave) filter with a less expensive SAW (surface acoustic wave) filter. The customer has not committed to use the resulting design and terms for a license have not been finalized.

Resonant Inc. was incorporated in Delaware in January 2012. Resonant LLC was formed in California during May 2012. Resonant LLC commenced business in July 2012 with initial funding from our founders. Resonant Inc. acquired all of the outstanding membership interests of Resonant LLC in June 2013 in an exchange transaction, and Resonant LLC became a wholly-owned subsidiary of Resonant Inc. Resonant Inc. had been dormant until that time.

Our principal executive offices are located at 110 Castilian Drive, Suite 100, Goleta, California 93117, and our telephone number is 805-308-9803. 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 prospectus.

Our History

Our technology was originally pioneered by Superconductor Technologies Inc., or STI. STI commercialized discoveries in high temperature superconductors by developing unique RF filter technology and creating high performance RF filters for cellular towers. STI had a program from 2007 to 2010 to develop electronically tunable RF filters for mobile devices using surface acoustic wave, or SAW, filter technology. STI halted work on the RF filter program in 2010 in order to devote its resources to the development of high temperature superconducting wire.

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Dr. Robert Hammond, STI s Chief Technology Officer during the RF filter program, continued to believe in the potential of STI s RF filter technology for mobile devices and championed its further development. 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, joined Dr. Hammond to co-found Resonant.

We were founded as Resonant LLC on May 29, 2012 (our inception date). We commenced business on July 6, 2012 with initial contributions from our founders and STI. The founders contributed $200,000 and agreed to work full-time without pay until we secured adequate funding. STI contributed a patent portfolio, software, equipment, temporary office space and an early version of our first development agreement.

The founders loaned us an aggregate of $200,000 during the first quarter of 2013, and we issued a series of warrants to the founders in connection with these loans. We refer to the founder loans as Bridge Loans and the founder warrants as Bridge Loan Warrants. We repaid the Bridge Loans in the second quarter of 2013.

We changed our form of ownership from a limited liability company to a corporation in an exchange transaction on June 17, 2013. The founders exchanged all of their units and warrants of Resonant LLC for common stock and warrants of Resonant Inc. STI exchanged all of its units of Resonant LLC for a $2.4 million subordinated convertible note of Resonant Inc., or Subordinated Convertible Note. The Subordinated Convertible Note was scheduled to mature on September 17, 2014, was interest free, was secured by all of our assets and was subordinated to our senior convertible notes.

We closed our first financing on June 17, 2013. We issued $7.0 million of senior convertible notes, or Senior Convertible Notes, in a private placement. The Senior Convertible Notes were scheduled to mature on September 17, 2014, bore interest at 6.0% per annum and were secured by all of our assets.

We paid MDB Capital Group, LLC, or MDB, which served as placement agent, a commission of $700,000 and issued it warrants to purchase 208,763 shares of common stock, which we refer to as the Financing Warrant. We also issued MDB on June 17, 2013 warrants to purchase 222,222 shares of common stock for business consulting services, which we refer to as the Consulting Warrant.

We closed our initial public offering, or IPO, on June 3, 2014. We issued 3,105,000 shares of common stock (which includes the exercise in full by the underwriter of its over-allotment option) at a price of $6.00 per share. We received aggregate net proceeds, after deducting underwriting discounts and commissions and estimated offering expenses, of $16.2 million. Our common stock commenced trading on the Nasdaq Capital Market under the symbol RESN on May 29, 2014, our IPO Date. The Securities and Exchange Commission, or SEC, declared effective a registration statement relating to these securities on May 28, 2014.

Effective upon completion of our IPO, our Senior Convertible Notes automatically converted into 2,087,667 shares of common stock, and our Subordinated Convertible Note automatically converted into 700,000 shares of common stock.

MDB acted as the sole underwriter for our IPO. Simultaneous with the funding of the IPO, we issued the underwriter a 5-year warrant to purchase 310,500 shares of common stock at an exercise price of $7.50 per share. The warrant became exercisable on November 24, 2014

(180-days from the date of the underwriting agreement). We refer to this warrant as the Underwriting Warrant.

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.

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• *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* 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.

The Mobile Internet

Rising consumer demand for always-on wireless broadband connectivity is creating an unprecedented need for high performance RF front-ends for mobile devices. Mobile devices such as smartphones and tablets are quickly becoming the primary means of accessing the internet. According to Cisco, worldwide mobile data traffic will grow at a compounded annual growth rate of 57 percent from 2014 to 2019. Cisco also reported that data traffic from wireless devices exceeded traffic from wired devices in 2014.

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. As a prime example, the AWS-3 spectrum auction conducted by the FCC, which closed on January 29, 2015, raised a record $44.9 billion for an additional 65MHz of spectrum in the United States. Similar auctions are occurring worldwide.

Adding RF spectrum 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

This substantial increase in frequency bands has created at least two significant problems. Both problems involve a critical front-end component called a filter. A filter selects a desired radio frequency signal and rejects unwanted signals. Two filters often are combined into a single component called a duplexer, which simultaneously selects both the transmit and receive signals of a mobile device. Today s RF front-ends have multiple filters and duplexers, and they constitute a large percentage of the physical size and cost of the front-end. We believe that filters and duplexers will comprise almost half of the cost to the RF front-end market by 2017.

The first problem is that many of the new bands require filters and duplexers that use a relatively expensive BAW technology. Mobile device manufacturers 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.

The second, and bigger problem, is that the rapid increase in bands is causing a corresponding increase in the number of filters and duplexers in mobile devices because traditional RF front-end solutions typically require one duplexer for each frequency band. For example, over the past two years the duplexer count in a leading smartphone increased from nine to twenty-three duplexers and corresponding large increase in the number of individual filters. This is dramatically driving up the cost of RF front-ends.

The growing number of duplexers is also increasing the total size of the RF front-end. In some cases, size constraints require the device manufacturer to fragment its product offering into multiple versions, each with a limited set of duplexers customized for just one carrier network. Multiple versions of a product increases manufacturing, inventory and distribution costs. Device manufacturers would prefer to make one version of a product containing a full set of duplexers that can be electronically selected as required for a particular carrier network.

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Our Solutions

We plan to commercialize our technology by creating two families of filter designs that address these problems:

• *Single-Band Designs* We plan to develop a series of SAW filter designs for RF frequency bands presently limited to the larger and more expensive BAW filters. We believe we can design innovative SAW filters that meet the performance requirements for many of these bands but at less than half the cost of BAW filter. We completed our first single-band filter design (a duplexer) during the first quarter of 2015.

• *Tunable Designs* We also plan to develop a series of tunable filter designs that can be electronically programmed in real time for different RF frequency bands. We believe our tunable filter designs will replace multiple filters and significantly lower the cost and size of RF front-ends. We began development of a prototype tunable design in the fourth quarter of 2014 for demonstrating our value proposition to prospective customers.

Our Technology

Modern mobile devices utilize RF filters based on a design patented in 1931 by Lloyd Espenschied. The conventional design process starts with Espenschied s acoustic wave ladder design a single, fixed topology. Other RF filter engineers presume the ladder design offers the best topology and do not explore alternative structures. Their focus is on incremental optimization of this single design. Consequently, the current design process has not bred any fundamentally new structures.

In addition, we believe better designs have eluded RF engineers because exploring the countless alternative structures presents a series of intractable mathematical and design problems. We have used ISN in a laboratory setting to solve those problems and demonstrate that many alternative and superior designs exist. Our design process starts at the beginning by efficiently finding and analyzing a series of potentially viable design structures. We believe it s possible with our ISN technology to find multiple, viable design structures for any given set of design parameters. We then use our ISN technology to analyze the trade-offs in performance, cost and size to determine the optimal structure for a specific function. Our ISN technology enables us to find the best solution from among the countless possible structures for any given design problem.

ISN is systematic process that employs a comprehensive suite of patented and proprietary circuit design methods and tools to create filters. Our process starts from the ground up and is not limited to the prevailing design. We use ISN to develop new classes of design that have eluded other RF engineers. We have had filters manufactured at high volume fabrication facilities with competitive performance, but our designs have not yet been selected for commercial production by any customer.

We believe ISN-developed filter designs will disrupt the RF front-end market through the following advantages:

- Significant cost reductions;

- Smaller size;

- Fewer components; and

- Improved performance.

We believe our ISN technology will generate designs that can be manufactured entirely with existing components and existing high-volume fabrication processes.

RF Front-Ends

Mobile devices are two-way communication devices that work by transmitting and receiving digital information encoded as analog RF signals between the mobile device and a cellular base station. Every mobile device has a digital baseband system and an analog RF front-end.

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The RF front-end is responsible for the analog signal processing required to transmit and receive RF signals between the mobile device and the cellular base station. The RF front-end is generally defined as the circuitry between the antenna and the digital baseband system. The RF front-end performs the following functions:

- Amplification of low-level signals (for both the transmitted and received signals);
- Filtering to select and isolate the signals to meet performance requirements and to prevent interference; and
- Transmitting and receiving those signals to and from the cellular base station via the antenna.

The RF front-end is a critical part of the mobile device. Trade-offs in overall system performance, power consumption, and size are determined between the RF front-end and the baseband system. On the receive side, the RF front-end sets the stage for what digital bit-error-rate performance is possible at final bit detection. It is here that the receiver can, within limits, be designed for the best potential signal to noise ratio. And on the transmit side, the power amplifier is still one of the largest consumers of battery life. Making better decisions here can greatly improve a device s single-charge longevity or, conversely, allow for a smaller battery with equivalent performance.

The Challenge

Moore s Law predicts that transistor density on integrated circuits will double approximately every two years, and the digital baseband of mobile devices has improved exponentially as predicted by Moore s Law. However, major improvements to the analog RF front-end have been limited by existing filter technology, with only incremental updates to decades-old practices. Consequently, the RF-front end is taking up an ever-growing share of the cost and size of mobile devices. As the number of bands continues to increase, so will the cost of wireless components using today s conventional RF technology.

Many mobile devices sold today operate on fourth generation wireless technology, or 4G. There are nearly fifty 4G bands recognized worldwide today, and the list is growing. Under traditional design methods, this requires duplication of many of the RF components since many of them will only work on a single band. The RF front-end gets more complex as more bands are added.

This complexity presents a significant challenge to the RF front-end. The RF front-end must meet the growing data demands while reducing cost and size and improving battery life. Our solution involves a radically new approach to RF component design, enabled by our ISN technology. Four types of RF components dominate the size and cost of the RF front-end of mobile devices. We believe our ISN designs will enable our customers to combine three of them into a single, low-cost, multi-function and multi-band component.

Our Filter Designs

Filter design for communications dates back more than 100 years. The RF filter designs currently utilized in mobile devices have changed very little over the past century. The modern mobile device RF front-end has kept pace with increased demands primarily through dramatic progress in manufacturing methods for RF integrated circuits. However, filter design has lagged behind.

We plan to change that with our ISN technology. Our ISN technology enables a fundamentally new filter design process. The current transmit filters are merely optimized versions of Espenschied s ubiquitous acoustic wave ladder used in today s mobile devices. Countless alternative designs are possible, but RF engineers lack the technology to effectively generate viable alternative structures.

By contrast, our universal approach starts from the beginning by finding and evaluating a set of alternative structures. ISN makes possible an approach that allows components to be moved, even eliminated or added, in order to achieve a particular set of specifications. We have created several proprietary RF circuit design methodologies, which are supported by dozens of custom software circuit design modules. The conventional Espenschied structure uses a fixed topology and allows only minor optimization. Our approach exploits added complexity to produce what we believe will be smaller, lower cost solutions.

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We have used our ISN technology to produce filter designs that are different from and superior to the conventional filter designs. Our designs have improved performance in terms of the key parameters of loss and steepness of rejection.

Even more significantly, the mobile device industry has long sought the ability to design tunable filters capable of processing multiple bands. The conventional approach is to use a different filter for each band and use an antenna switch to alternate between multiple filters. The goal of a tunable filter is to replace multiple filters with a single tunable filter, saving both cost and valuable space. Our ISN technology has enabled us to produce in a laboratory setting tunable designs that operate in multiple bands.

We have produced a design in a laboratory setting for a two-band SAW filter electronically tunable between two alternate bands. Circuitry was fabricated and performed as predicted. The design incorporates SAW resonators, non-resonant components and switches to create a tunable SAW filter that can be adapted to each of the frequency bands. This demonstrated the feasibility of reusing the same set of resonators to create multiple passbands. We believe that a 3-band tunable filter offers sufficient advantages in terms of cost and size to be a commercially viable product. We plan to use the same ISN process to create tunable filters for more than two bands. We cannot assure investors that we will be successful in designing commercially viable filters with 2 or more passbands.

Plan of Commercialization

Single-Band Designs

SAW filters are preferred in modern RF front-ends because of their high performance, small size and low cost. However, traditional SAW filter designs, as well as the new temperature compensated (or TC) SAW filter designs, do not perform well in high frequency bands or bands with closely spaced receive and transmit channels, typical of many new bands. Therefore, larger and more expensive BAW filters are typically used for these bands.

We have demonstrated in a test environment our ability to design SAW filters that perform well in frequency bands presently limited to the larger and more expensive BAW filters. Our designs avoid some of the limitations of traditional designs. For example, traditional designs are inherently symmetric, and most specifications are inherently asymmetric. Our flexible ISN approach allows us to create asymmetric designs that more closely match the typical performance specifications. We plan to develop a series of SAW duplexer designs for these frequency bands. We believe we can design SAW duplexers for many of these bands that can be manufactured at less than half the cost of BAW duplexers. We also believe our designs will be competitive with TC SAW filters, a growing trend in the filter market.

There is a rapidly growing need for duplexers. According to Navian, the market for RF front-end duplexers in mobile devices was $1.8 billion in 2013 and is forecasted to reach $3.3 billion by 2017. This represents a compound annual growth rate of approximately 16%.

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Figure 1 Projected growth of the market for RF front-end filters in mobile devices from 2013 through 2017 (in billions of filters). *Source: Navian.*

Tunable Designs

We plan to develop a series of tunable filter designs that replace multiple filters. Our initial designs are likely to use SAW filters and build on our expertise in SAW filter technology. We have fabricated circuitry in a laboratory test that demonstrates the feasibility of our tunable filter designs. We believe we can design tunable filters that can be electronically reprogrammed in real time for different RF frequency bands, significantly lowering the cost and size of RF front-ends.

We have ongoing discussions with several prospective customers for the design of tunable filters with the goal of securing a lead customer. We began development in the fourth quarter of 2014 of a prototype tunable filter for demonstrating our value proposition to prospective customers.

According to Navian, the market for RF front-end filters in mobile devices (including duplexers) was $2.7 billion in 2013 and is forecasted to reach $5.2 billion by 2017. This represents a compound annual growth rate of approximately 18%.

Figure 3 Projected growth of the market for RF front-end filters in mobile devices (including duplexers) from 2013 through 2017 (in billions of dollars). *Source: Navian.*

Future Designs

Our immediate focus is to address the problems in the RF front-end with innovative single-band and tunable 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 carrier aggregation will require complex filter multiplexing. We believe our ISN technology will enable cost effective designs for these applications.

Our First Commercial Duplexer Design

We are developing our first filter design, a duplexer, for our first customer. We are funding our portion of the development work and will own our duplexer design and all related intellectual property. Our customer is funding certain costs and devoting engineering resources to testing and qualification. The customer is an innovator in high performance analog semiconductors and a leading supplier of RF front-ends for mobile devices. We have started with fixed band designs because we believe it gives us the opportunity to quickly demonstrate our ISN process.

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We recently delivered a completed duplexer design to our first customer for consideration. Our design does not meet all the specifications in the development agreement, however, we believe our design delivers competitive performance and is competing with other products. The customer is evaluating our design, and there is no assurance that it has acceptable performance and therefore will be used. Even if it has acceptable performance, there are a number of other considerations influencing the customer s decision whether to use our design, many of which are beyond our control. There is no assurance that our design will be selected by the customer for use in its products.

The customer has an option to license the filter design at already agreed-upon royalty rates. We will own our duplexer design and all related intellectual property. The terms of the license would give the customer exclusivity on our filter designs for a limited time on the relevant duplexer band. The exclusivity will not affect our ability to design filters in other bands.

Business Model

We believe licensing our designs is the most direct and effective means of delivering our solutions to the market. Our target customers make part or all of the RF front-end. We intend to retain ownership of our designs and charge royalties based on sales of RF front-end modules that incorporate our designs. We generally 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 develop and license filter designs that offer improvements in cost, size and performance of RF front-ends. The goal of our designs is to improve profit margins and increase market share for our customers.

We will license specific, custom designs to our customers. Our plan is to charge royalties at a fixed amount per filter and not as a percentage of sales. We expect to generate substantially all of our 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 a significant delay between the start of a design and the start of royalty payments under a particular license. In some cases, we may grant the customer a limited period of exclusivity on a specific design or frequency band to enable the customer to be the first to market with the design. We do not expect any of these exclusivity provisions to have any long-term duration nor prevent us from concurrently working on filter designs in other bands for other customers.

We have advantages that we believe present significant barriers to entry for potential competitors:

- a large and growing portfolio of patents;

- a suite of proprietary software design tools;

- a highly experienced design team; and

- a multi-year technology lead.

We plan to pursue filter design projects with potential customers and other strategic partners. These types of arrangements may subsidize filter design costs, as well as offer complementary technology and market intelligence. However, we intend to retain ownership of our technology, designs and related improvements. Our goal is to establish and leverage alliances with new 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 Resonant-based solutions.

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 traditional 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.

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Intellectual Property

We have an active program of protecting our proprietary technology through the filing of patents. Our patent portfolio reflects both the initial technology contribution of STI, as well as our own patent filings since our founding. We have plans to file additional patents this year.

Our patent portfolio comprises more than 50 issued and pending patents. Our patent portfolio relates primarily to the following subject matter:

- filter circuit structures and topologies;
- filter synthesis and design methods; and
- resonator structures.

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.

Our research has not identified any public information, such as patents or published articles, relating to our technology that would affect our freedom to operate. However, 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, copyright and trade secret laws to protect our intellectual property. We have registered U.S. trademarks for Resonant, ISN and Integrated 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

Our potential customers typically source their filter designs internally from their own engineers. We intend to offer our customers filter designs that we believe do not currently exist. Our competitive challenge is to convince customers that our unconventional, proprietary designs offer significant size, cost and performance advantages over any design they can produce themselves or procure from a filter manufacturer.

Thus, we will compete indirectly with the existing filter designs and design capabilities of our target customers or their filter manufacturers. These companies include, among others, Skyworks Solutions Inc., Qorvo, Inc., Avago Technologies Limited, Murata Manufacturing Co., Ltd., TDK Epcos and Taiyo Yuden. We must demonstrate that switching from their designs to our designs will give them a significant competitive advantage by improving the cost, size and performance of their products, and the improvement must be large enough to justify our royalty rates.

We believe that all previous attempts to produce tunable filters have focused on varying the frequencies of the resonators by changing their capacitance. This is traditionally performed by incorporating variable capacitors or switched capacitors into the resonator. This approach has proven unsuccessful at meeting the performance requirements of the RF front-end market. ISN technology avoids this problem because it does not require varying any aspect of the resonators. However, several RF devices are in development that may improve the ability to vary the frequencies of the resonators. These include digitally-switched capacitors, MEMS (micro-electro-mechanical) tuned capacitors, BST (barium strontium titanate) tuned capacitors, and MEMS RF switches. Thus, these previous attempts to produce tunable filters may become more competitive than they are today.

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Some companies are exploring pure digital solutions as alternatives to tunable filters. Pure digital solutions advance steadily, as predicted by Moore s Law. As a result of the many decades of this progress to date, a great many traditionally analog tasks are now handled digitally. However, RF front-end analog tasks represent a much more demanding challenge. One of the most significant challenges is the large dynamic range, which means simultaneously processing a transmit signal power up to 100 trillion times larger than the receive signal power inside a small, mobile device. Digital solutions have advanced significantly, but they still have dynamic ranges thousands of times smaller than required.

Employees

We have twenty-two employees. Our three founders divide their time between filter designs and administrative matters. We have twelve other employees on our technical staff and seven employees devoted to finance, marketing and administrative matters. We also use several outside consultants.

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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 are a have a history of operating losses and we may never achieve or maintain profitability.

We have a limited operating history and only a preliminary business plan upon which investors may evaluate our prospects. We have never generated revenues and we have a history of losses from operations. As of December 31, 2014, we had an accumulated deficit of $21.2 million. Our principal sources of liquidity consist of existing cash balances and investments of $13.8 million. We believe our current resources will provide sufficient funding for planned operations into the first half of 2016. If we do not generate adequate cash from revenues in 2016 in order to reach positive cash flows, we likely will be required to obtain additional financing to continue with our plan of commercialization and 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. No assurance can be given that any form of additional financing can be obtained, that the terms of such financing will be acceptable or that such financing would not be dilutive to existing stockholders. Thus, our ability to achieve revenue-generating cash flows and, ultimately, achieve profitability may depend on whether we can obtain additional capital when we need it and will depend on whether we complete the development of our technology and find customers who will license our designs. There can be no assurance that we will ever generate revenues or achieve profitability.

We may not be able to complete a design that meets our first customer s specifications. Even if we succeed in developing a design that meets all the specifications for our customer, the customer could decline to use our design in its product. 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 a filter design for our first customer, and the customer has given us stringent performance specifications. We will also compete against other technologies for inclusion into the customer s product. Our customer s final product will then compete against other products and technologies for inclusion into mobile devices in the marketplace. There can be no assurance that we can complete our design or that our final design will have acceptable performance and meet our customer s specifications. The decision to use our design is solely within our customer s discretion.

We have delivered a completed duplexer design for consideration to our first customer. Our design does not meet all the specifications in the development agreement, however, we believe our design delivers competitive performance and is competing with other products. The customer is evaluating it, and there is no assurance that our design has acceptable performance and therefore will be used. Even if it has acceptable performance, there are a number of other considerations influencing the customer s decision whether to use our design, many of which are beyond our control. Further, if selected for inclusion in its product by our customer, there is no guarantee that its final product will win out over its competition for inclusion into mobile devices. Either failure (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 required to fabricate test samples of the duplexer designs for our first customer using a customer-approved 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.

We believe our designs can be manufactured using existing technology, but we will be dependent on a single, customer approved manufacturer for the fabrication of our first duplexer design. Even if we successfully design a fully compliant duplexer, the customer will 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.

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We are actively working on filter designs with only two customers 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 are currently working on filter designs with only two customers. Neither customer has agreed to license our technology, and they may decide not to continue their relationship with us. We expect to derive our revenues from a small number of customers. Our revenues may fluctuate significantly in the future should we develop our technology and enter into new customer relationships. 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.

Our designs may not gain widespread acceptance unless they significantly lower costs as compared to existing radio frequency, or RF, filter designs.

RF front-end manufacturers are primarily concerned with the cost of RF filters, and our designs may not gain widespread acceptance unless they significantly lower costs as compared to existing RF filter designs. We cannot assure you that our surface acoustic wave, or SAW, filter designs will cost sufficiently less to manufacture than existing bulk acoustic wave, or BAW, filters, or that our tunable filter designs can replace a sufficient number of conventional filter designs, to prove economically attractive to RF front-end manufacturers.

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 reliable 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.

Our SAW-based circuit designs will be complex and may prove difficult to manufacture in commercial quantities. We will be relying on our prospective customers and their circuit suppliers to manufacture our designs. Our business could fail if they encounter difficulties manufacturing our designs in commercial quantities.

We are developing complex RF circuit designs. We have never manufactured any of our designs beyond an initial prototype. Furthermore, we will be relying on our prospective customers and their circuit suppliers to manufacture our designs. They will need to manufacture our designs in commercial quantities at an acceptable cost, and we will have little or no control over the manufacturing process. They may encounter difficulties in scaling up production of our designs currently in development or other future designs, including problems with quality control and assurance, component supply shortages, increased costs, shortages of qualified personnel and/or difficulties associated with compliance with regulatory requirements. Our business could fail if our customers and their suppliers encounter difficulties manufacturing our designs in commercial quantities.

We will be dependent on third-party manufacturers to produce our filter designs, and our revenues may be adversely affected if these manufacturers experience shortages of raw materials or breakdowns in production equipment.

We will be dependent on our prospective customers and their circuit suppliers to manufacture our designs. We will have little or no control over the manufacturing process. Manufacturing integrated circuits is inherently challenging. The manufacturers must secure adequate supplies of raw materials, and they may encounter periodic shortages. They must also operate and maintain sophisticated manufacturing equipment, and equipment failures can have adverse consequences on production volumes and schedules. Either of these problems may adversely affect the timing and amount of our future revenues.

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

We are a design company and will not commercially manufacture any products. Our business model contemplates licensing our designs to customers, who will manufacture our circuit designs themselves or rely on third party manufacturers, commonly referred to as fab houses, to fabricate our circuit designs for integration into the customer s overall product. Many fab houses 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 fab houses to manufacture our designs. We believe the economics can be structured to make it attractive to the fab houses 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 fab houses to manufacture our designs could adversely affect the market acceptance of our designs.

We plan to be a design firm licensing our SAW-based circuit designs to manufacturers of RF front-ends for mobile devices. If our circuit designs do not achieve widespread market acceptance among RF front-end manufacturers, we will not be able to generate the revenue necessary to support our business.

Achieving acceptance among RF front-end manufacturers of our circuit designs will be crucial to our continued success. We have no history of marketing any circuit design and we may fail to generate significant interest in our initial commercial circuit designs or any other circuit designs we may develop. These and other factors may affect the rate and level of market acceptance, including:

- our pricing 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 with prospective customers and adversely affect our future revenues and operating costs.

We are developing highly complex filters designs using a new approach. We have not previously produced any 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.

Our technologies are not yet verified in practice or on a commercial scale.

Our technologies have not been tested in a commercial setting or on a commercial scale. There is no assurance that we will be able to fully develop or license our proposed designs on a timely basis, or at all. There can be no assurance that we will be successful in developing commercially viable designs or obtaining revenues or that any revenues we may obtain will be sufficient for our operations to continue.

We may require additional capital to support growth, and such capital might not be available on terms acceptable to us, if at all, which may in turn hamper our growth and adversely affect our business.

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 develop new technology, improve our operating infrastructure or acquire complementary businesses and technologies. Our principal sources of liquidity consist of existing cash balances and investments of $13.8 million. We believe our current resources will provide sufficient funding for planned operations into the first half of 2016. Accordingly, we may need to engage in equity, equity-linked or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity

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securities we issue could have rights, preferences and privileges superior to those of holders of our common stock. Any debt financing that we secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, including the ability to pay dividends. This may make it more difficult for us to obtain additional capital and to pursue business opportunities. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and respond to business challenges could be significantly impaired, and 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.

Our industry is subject to intense competition and rapid technological change, which may result in circuit 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 and 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 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 under development, or any future designs we may have, and its technologies obsolete. Many of our competitors have or may have greater corporate, financial, operational, sales and marketing 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.

Our business model is based on licensing filter designs. Historically, our target customers have relied on their own filter designs or purchased finished filters from a manufacturer. They have not licensed third-party designs, and we may not succeed in our licensing strategy. The failure of our business model 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 RF front-end modules that incorporate our designs.

Our target customers make part or all of the RF front-end. 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 we may encounter resistance to our licensing strategy. The failure of our business model would have a material adverse effect on our potential for generating revenues and potentially threaten our viability.

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

According to our business plan, our initial circuit designs will be 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:

- 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;

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- 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 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, trade secret and patent laws, confidentiality procedures and contractual provisions to protect our proprietary methods and technologies. We currently hold several 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 many 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.

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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 circuit 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.

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

Our customer agreements will likely will 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 circuit 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 commercially available software pursuant to annual licenses, and the inability to renew any of these licenses could adversely affect our ability to design new RF filters 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 annual 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 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:

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- build a reputation for a superior solution and create trust and long-term relationships with our potential customers;
- distinguish ourselves from competitors in our industry;
- develop and offer a competitive technology that meet our potential 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 offering documentation, 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.

For example, during the third quarter of 2014, we identified a material weakness in our internal control over financial reporting relating to our lack of sufficient policies and procedures in the review of complex financial instruments and a clerical error in the computation of loss per share, which resulted in restatements to our financial statements included in our previously filed Quarterly Report on Form 10-Q for the period ended June 30, 2014. As a result, our internal control over financial reporting was not effective as of June 30, 2014 and September 30, 2014. While we have taken actions that we believe remediated the material weakness, we may again experience control and procedure deficiencies in the future. Investors may not wish to invest in a company with identified control and procedure deficiencies.

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. Specifically, the loss of the services of any of the following would be material to us: Terry Lingren, our Chief Executive Officer; Robert Hammond, our Chief Technology Officer; and Neal Fenzi, our Chief Operating Officer. 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.

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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 the section entitled *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 convertible debt instruments, derivative instruments, other financial instruments and income taxes.

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.

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

Two securities class action lawsuits have been filed against us and could have a material adverse effect on our business, results of operations and financial condition.

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. These lawsuits may divert financial and management resources that would otherwise be used to benefit our operations. Although the Company denies the material allegations of both lawsuits and intends to defend vigorously both, defending the lawsuits could result in substantial costs. No assurances can be given that the results of these matters will be favorable to us. An adverse resolution of either of these lawsuits could have a material adverse effect on our results of operations and financial condition. 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.

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, as a result of this 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 the following:

- the progress, completion or failure of efforts to design our first commercial duplexer;
- a customer decision regarding incorporation of our first duplexer design 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;

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- 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.

Sales of substantial amounts of our common stock in the public markets, including when the lock-up or market standoff period ends, or the perception that sales might occur, could reduce the price of our common stock and may dilute your voting power and ownership interest in us.

Sales of a substantial number of shares of our common stock in the public market could adversely affect the market price of our common stock. All of the shares of common stock sold in our initial public offering, as well as the shares issued on conversion of our Senior Convertible Notes, are freely tradable without restrictions or further registration under the Securities Act of 1933, as amended, or the Securities Act, except for any shares held by our affiliates as defined in Rule 144 under the Securities Act.

Subject to certain exceptions, the founders and other employees agreed not to offer, sell or agree to sell, directly or indirectly, any shares of common stock without the permission of the underwriter before May 28, 2015 (12 months from the IPO). When the lockup period expire, the founders and employees will be able to sell shares in the public market. In addition, the underwriter may, in its sole discretion, release all or some portion of the shares subject to lock-up agreements prior to the expiration of the applicable lock-up period. Sales of a substantial number of such shares upon expiration, or the perception that such sales may occur, or early release of the lock-up, could cause our share price to fall or make it more difficult for you to sell your common stock at a time and price that you deem appropriate.

Certain holders of our common stock have rights, subject to some conditions, to require us to file registration statements covering the sale of their shares or to include their shares in registration statements that we may file for ourselves or other stockholders.

We may issue our shares of common stock or securities convertible into our common stock from time to time in connection with a financing, acquisition, investments or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and cause the trading price of our common stock to decline.

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 33.77% of the outstanding shares of our common stock as of December 31, 2014. 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.

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We have broad discretion in the use of net proceeds that we received in our initial public offering, and if we do not use those proceeds effectively, your investment could be harmed.

The principal purposes of our initial public offering were to raise additional capital, to create a public market for our common stock and to facilitate our future access to the public equity markets. We have not yet determined the specific allocation of the net proceeds that we received in our initial public offering. We intend to use such net proceeds for product development to commercialize our technology, research and development, the development of our patent strategy and expansion of our patent portfolio, to pay accrued interest on outstanding indebtedness, and for working capital and general corporate purposes. We also may use a portion of such net proceeds to acquire or invest in technologies, solutions or businesses that complement our business, although we have no present commitments to complete any such transactions at this time. Accordingly, our management will have broad discretion over the specific use of the net proceeds that we received in our initial public offering and might not be able to obtain a significant return, if any, on investment of these net proceeds. If we do not use the net proceeds that we received in our initial public offering effectively, our business, results of operations and financial condition could be harmed.

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 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.

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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 will be 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 will be required to furnish a report by our management on our internal control over financial reporting the year following our first annual report required to be filed with the SEC. When required, such report will contain, 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.

During the third quarter of 2014, we identified a material weakness in our internal control over financial reporting relating to our lack of sufficient policies and procedures in the review of complex financial instruments and a clerical error in the computation of loss per share, which resulted in restatements to our financial statements included in our previously filed Quarterly Report on Form 10-Q for the period ended June 30, 2014. As a result, our internal control over financial reporting was not effective as of June 30, 2014 and September 30, 2014. While we have taken actions that we believe remediated the material weakness, we may again experience control and procedure deficiencies in the future.

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 year following our first annual report required to be filed with the SEC, 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.

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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 circuit 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,

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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 circuit 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 circuit 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 potential 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.

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ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We maintain our principal office, totaling approximately 5,500 square feet of office and laboratory space, in Santa Barbara, California under a lease that expires in July 2017 and provides us with an option for an additional three years. We lease an additional 1,800 square feet of office space in Burlingame, California under a lease that expires in November 2015 and provides us with an option for an additional two years. This facility is a satellite office and is used by several members of our technical team resident in the San Francisco Bay area. We believe our current facilities will be adequate through the second quarter of 2015. We believe that suitable additional space will be available to accommodate our planned growth.

ITEM 3. LEGAL PROCEEDINGS

On March 17, 2015, a putative class action lawsuit was commenced against the Company, Terry Lingren and John Philpott, in the United States District Court for the Central District of California, captioned *John Paggos v. Resonant Inc., et al.*, No. 2:15-cv-01970-SJO-VBK. The plaintiff alleges that the Company and the individual defendants violated Section 10(b) of the Securities Exchange Act of 1934 (the Exchange Act), Rule 10b-5 promulgated thereunder and Section 20(a) of the Exchange Act. The plaintiff purports to be acting on behalf of a class consisting of purchasers or acquirers of the Company s common stock between August 14, 2014 and February 26, 2015 (the Paggos Class Period). The plaintiff alleges 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 throughout the Paggos Class Period. The plaintiff seeks compensatory damages and fees and costs, among other relief, but has not specified the amount of damages being sought in the action.

On March 19, 2015, a putative class action lawsuit was commenced against the Company, Terry Lingren and John Philpott, in the United States District Court for the Central District of California, captioned *John Devouassoux v. Resonant Inc., et al.*, No. 2:15-cv-02054-JFW-VBK. The plaintiff alleges that the Company and the individual defendants violated Section 10(b) of the Exchange Act, Rule 10b-5 promulgated thereunder and Section 20(a) of the Exchange Act. The plaintiff purports to be acting on behalf of a class consisting of purchasers or acquirers of the Company s common stock between November 6, 2014 and February 26, 2015 (the Devouassoux Class Period). The plaintiff alleges that, as a result of the defendants allegedly false and/or misleading statements and/or omissions concerning our financial well-being and prospects, our common stock traded at artificially inflated prices throughout the Devouassoux Class Period. The plaintiff seeks compensatory damages and fees and costs, among other relief, but has not specified the amount of damages being sought in the action.

We deny the material allegations of both the *Paggos* and *Devouassoux* actions and intends to defend vigorously both.

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 has been listed on the NASDAQ Capital Market under the symbol RESN since May 29, 2014. Prior to that date, there was no public trading market for our common stock. 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 2014		
Second Quarter (from May 29, 2014)	$ 11.54	$ 7.25
Third Quarter	$ 8.24	$ 6.02
Fourth Quarter	$ 12.00	$ 4.93

On March 24, 2015, the last reported sale price of our common stock on the NASDAQ Capital Market was $8.63 per share.

Holders of Record

As of December 31, 2014, we had 107 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

During the fourth quarter of 2014, we issued a warrant to purchase 6,000 shares of common stock to an investor relations consultant which vests monthly over twelve months. The warrant has an exercise price of $6.50 and expires on September 30, 2018. The consultant provided us with written representations confirming her status as an accredited investor under Regulation D and her intent to acquire the securities for her own account and not with a view to resale or distribution in violation of the Securities Act of 1933. We did not engage in general solicitation or advertising, and the securities issued in the transaction bear appropriate restrictive legends concerning the registration requirements of the Securities Act of 1933. We believe this transaction was exempt from the registration requirements of the Securities Act of 1933 based on Regulation D and Section 4(2) of the Securities Act of 1933.

Use of Proceeds

On June 3, 2014, we closed our initial public offering of 3,105,000 shares of our common stock, which included 405,000 shares of common stock sold upon the full exercise of the underwriter s overallotment option. The offer and sale of all of the shares in the initial public offering were registered under the Securities Act pursuant to registration statements on Form S-1 (File Nos. 333-193552 and 333-196340), which were declared effective by the SEC on May 28, 2014. MDB Capital Group, LLC acted as the underwriter for the offering. The public offering price of the shares sold in the offering was $6.00 per share. The total gross proceeds from the offering to us were $18.6 million. After deducting underwriting discounts and commissions of $1.6 million and offering expenses payable by us of $0.8 million, we received approximately $16.2 million. There has been no material change in the planned use of proceeds from our initial public offering as described in our final prospectus filed with the SEC on May 29, 2014 pursuant to Rule 424(b) of the Securities Act.

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ITEM 6. SELECTED FINANCIAL DATA

Not applicable.

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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 creating innovative filter designs for radio frequency, or RF, front-ends for the mobile device industry. The RF front-end is the circuitry in a mobile device responsible for analog signal processing and is located between the device s antenna and its digital baseband. We use a fundamentally new technology called 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. We are using ISN to develop new classes of filter designs.

We believe licensing our designs is the most direct and effective means of delivering our solutions to the market. Our target customers make part or all of the RF front-end. We intend to retain ownership of our designs, and we expect to be compensated through license fees and royalties based on sales of RF front-end modules 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.

We are currently developing our first design, a duplexer, for our first customer, a leading manufacturer of RF front-ends for mobile devices. Duplexers are two filters combined into a single component which simultaneously selects both transmit and receive signals. Our customer has an option to license our duplexer design at already agreed-upon royalty rates upon completion.

We recently delivered a completed duplexer design to the customer for consideration. Our design does not meet all the specifications in the development agreement, however, we believe our design delivers competitive performance and is competing with other products. The customer is evaluating our design, and there is no assurance that it has acceptable performance and therefore will be used. Even if it has acceptable performance, there are a number of other considerations influencing the customer s decision whether to use our design, many of which are beyond our control. There is no assurance that our design will be selected by the customer for use in its products.

On March 9, 2015, we announced a development project with a second customer for the design of our next single-band RF filter. The goal of the project is to develop a new duplexer design for our customer to market to RF front-end manufacturers and mobile device OEMs. The design, which is estimated to take less than a year to develop, is intended to replace a BAW (bulk acoustic wave) filter with a less expensive SAW (surface acoustic wave) filter. The customer has not committed to use the resulting design and terms for a license have not been finalized.

We were founded as Resonant LLC on May 29, 2012 (our inception date). We commenced business on July 6, 2012 with initial contributions from our founders and Superconductor Technologies Inc., or STI. The founders contributed $200,000 and agreed to work full-time without pay until we secured adequate funding. STI contributed a patent portfolio, software, equipment, temporary office space and an early version of the development agreement with our first customer.

The founders loaned us an aggregate of $200,000 during the first quarter of 2013, and we issued a series of warrants to the founders in connection with these loans. We refer to the founder loans as Bridge Loans and the founder warrants as Bridge Loan Warrants. We repaid the Bridge Loans in the second quarter of 2013.

We changed our form of ownership from a limited liability company to a corporation in an exchange transaction on June 17, 2013. The founders exchanged all of their units and warrants of Resonant LLC for common stock and warrants of Resonant Inc. STI exchanged all of its units of Resonant LLC for a $2.4 million subordinated convertible note of Resonant Inc., or Subordinated Convertible Note. The Subordinated Convertible Note was scheduled to mature on September 17, 2014, was interest free, was secured by all of our assets and was subordinated to our senior convertible notes.

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We closed our first financing on June 17, 2013. We issued $7.0 million of senior convertible notes, or Senior Convertible Notes, in a private placement. The Senior Convertible Notes were scheduled to mature on September 17, 2014, bore interest at 6.0% per annum and were secured by all of our assets.

We paid MDB Capital Group, LLC, or MDB, which served as placement agent, a commission of $700,000 and issued it warrants to purchase 208,763 shares of common stock, which we refer to as the Financing Warrant. We also issued MDB on June 17, 2013 warrants to purchase 222,222 shares of common stock for business consulting services, which we refer to as the Consulting Warrant.

We closed our initial public offering, or IPO, on June 3, 2014. We sold 3,105,000 shares of common stock (which includes the exercise in full by the underwriter of its over-allotment option) at a price of $6.00 per share. We received aggregate net proceeds, after deducting underwriting discounts and commissions and estimated offering expenses, of $16.2 million. Our common stock commenced trading on the Nasdaq Capital Market under the symbol RESN on May 29, 2014, our IPO Date. The Securities and Exchange Commission declared effective a registration statement relating to these securities on May 28, 2014.

MDB acted as the sole underwriter for our IPO. Simultaneous with the funding of the IPO, we issued the underwriter a 5-year warrant to purchase 310,500 shares of common stock at an exercise price of $7.50 per share. The warrant is not exercisable until November 24, 2014 (180-days from the date of the underwriting agreement). We refer to this warrant as the Underwriting Warrant.

Our Senior Convertible Notes automatically converted into 2,087,667 shares of common stock effective upon the completion of the IPO. We paid in cash the accrued interest of $404,000. Similarly, our Subordinated Convertible Note automatically converted into 700,000 shares of common stock. There was no accrued interest on this note. The shares issued on conversion of the Senior Convertible Note were subject to a 180-day lockup that expired on November 24, 2014, and the shares issued on conversion of the Subordinated Convertible Note are subject to a 12-month lockup expiring May 28, 2015.

We have earned no revenue since inception, and our operations have been funded with the initial capital contributions and debt. We have incurred accumulated losses totaling $21.2 million from inception through December 31, 2014. These losses are primarily the result of research and development costs associated with commercializing our technology, combined with start-up and financing 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 contemplate the continuation of our business as a going concern. However, we are subject to the risks and uncertainties associated with a new business. We do not yet have the ability to earn revenue and have incurred significant losses from operations since inception. At December 31, 2013 and 2014, we had an Accumulated Deficit of $11.5 million and $21.2 million, respectively, and cash and cash equivalents of $3.3 million and $5.8 million, respectively. Additionally, as of December 31, 2014 we had $8.0 million in short-term investments.

Plan of Operation

We plan to commercialize our technology by creating filter designs that address the problems created by the growing number of frequency bands in the RF front-end of mobile devices. First, we plan to develop a series of single-band surface acoustic wave, or SAW, filter designs for frequency bands presently dominated by larger and more expensive bulk acoustic wave, or BAW, filters. Second, we plan to develop tunable filter designs that replace multiple filters. In order to succeed, we must convince RF front-end suppliers that our filter designs can significantly reduce the size and cost of their products.

We plan to pursue filter design projects with potential customers and other strategic partners. These types of arrangements may subsidize filter design costs, as well as offer complementary technology and market intelligence and other avenues to revenue. However, we intend to retain ownership of our technology, designs and related improvements. We expect to pursue development of multiple designs for multiple customers, and grant each customer a royalty-bearing license to a specific design with some limited period of exclusivity.

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We are using the net proceeds from our IPO 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 anticipated 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. We anticipate significantly increasing the number of employees this year. However, this is highly 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, 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 use a portion of any net proceeds to acquire complementary products, technologies or businesses; however, we do not have plans for any acquisitions at this time. We will have significant discretion in the use of any net proceeds. Investors will be relying on the judgment of our management regarding the application of the proceeds of any sale of our common stock.

We cannot assure you that our technology will be accepted, that we will ever earn revenues sufficient to support our operations or that we will ever be profitable. We believe our current cash and investments of approximately $13.8 million will provide sufficient funding for planned operations into the first half of 2016. If we do not generate adequate cash from revenues in 2016 in order to reach positive cash flows, we likely will be required to obtain additional financing to continue with our plan of commercialization. Furthermore, since we have no committed source of financing, we cannot assure you that we will be able to raise money as and when we need it to continue our operations. If we cannot raise funds as and when we need them, 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.

Results of Operations

The consolidated statements of operations presented in our consolidated financial statements represent the activities of (a) Resonant LLC, as predecessor company, for the period from January 1, 2013 to June 16, 2013, and (b) Resonant Inc., as successor company, for the period from June 17, 2013 to December 31, 2013 and the year ended December 31, 2014. Consequently, the fiscal year 2013 period combines the statements of operations of Resonant LLC and of Resonant Inc. as shown in the following table:

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	Resonant LLC Period From January 1, 2013 to June 16, 2013	Resonant Inc. Period From June 17, 2013 to December 31, 2013	Total Fiscal Year 2013 Period
Revenue	$	$	$
Operating Expenses**:**			
Research and development expenses	195,403	926,095	1,121,498
General and administrative expenses	135,993	1,485,313	1,621,306
Depreciation and amortization	4,905	14,424	19,329
Total operating expenses	336,301	2,425,832	2,762,133
Operating loss	(336,301)	(2,425,832)	(2,762,133)
Other income (expense):			
Interest income (expense), net	(199,961)	(1,355,425)	(1,555,386)
Fair value adjustments to warrant and derivative liabilities		(4,520,736)	(4,520,736)
Bridge warrant expense	(247,669)	(312,486)	(560,155)
Other income (expense)		(333)	(333)
Total other income (expense)	(447,630)	(6,188,980)	(6,636,610)
Loss before income taxes	(783,931)	(8,614,812)	(9,398,743)
Provision for income taxes	(800)	(1,256)	(2,056)
Net loss	$ (784,731)	$ (8,616,068)	$ (9,400,799)

Comparison of the Years Ended December 31, 2013 and 2014

Research and Development. Research and development expenses increased from $1.1 million in the year ended December 31, 2013, or 2013, to $2.9 million in the year ended December 31, 2014, or 2014. The increase of $1.8 million is the result of the increased payroll, benefit costs, stock compensation expenses, consulting costs and development costs related to increased activity on our duplexer design under development. There were no employees until late June 2013 when we completed the Senior Convertible Note financing and we have expanded our research and development employees to 13 as of the end of December 31, 2014.

General and Administrative Expenses. General and administrative expenses increased from $1.6 million in 2013 to $2.9 million in 2014. The increase of $1.3 million consists primarily of payroll and related expenses associated with increased staffing following our June 2013 financing and our June 2014 IPO. The 2013 period consisted primarily of a non-cash charge of $716,000 for the fair value of the warrants issued for business consulting services. The consulting services were completed in 2013, and therefore we did not incur similar charges in 2014. Excluding the effect of the warrant charges from 2013, general and administrative expenses for 2014 increased by $2.0 million. The increase was due primarily to increased payroll, benefit costs, D&O insurance, finance costs, stock compensation and accounting expenses. We anticipate that our general and administrative expenses will continue to increase as a result of planned growth and the costs associated with operating as a public company.

Depreciation and Amortization Expense. Depreciation and amortization expense increased by $201,000 from $19,000 in 2013 to $220,000 in 2014 primarily as a result of our increases in fixed assets associated with our new corporate headquarters and increase in employees in 2014 and our investment in patents.

Interest Income. Interest income increased by $28,000 from $1,000 in 2013 to $29,000 in 2014 primarily due to the increased cash balances from the net proceeds from the IPO. We expect interest income to increase modestly in 2015 as we earn interest on our increased cash balances.

Interest Expense. Interest expense increased by $1.2 million, from $1.6 million in 2013 to $2.8 million in 2014. The increase consists primarily of amortization and write-off of debt discounts and deferred financing costs due to the conversion of the convertible notes: $1.5 million for the Senior Convertible Notes, $151,000 for the Subordinated Convertible Note and $745,000 for the deferred financing costs. We also incurred and paid $404,000 of interest on the Senior Convertible Notes for 2014. We repaid the Bridge Loans in June 2013. The Senior Convertible Notes and the Subordinated Convertible Note were converted into common stock in June 2014 in connection with our IPO. Debt discounts and deferred financing cost amortizations ceased upon conversion of these notes.

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Fair Value Adjustments to Warrant and Derivative Liabilities. We recorded all of our warrant and derivative liabilities at their fair value at issuance and adjusted the liabilities quarterly to reflect changes in their fair value. Periodic adjustments to the fair value of these liabilities generated non-cash expense if they increased and non-cash income if they decreased. The fair value of these liabilities may have fluctuated significantly from quarter to quarter until the IPO Date. There was an increase of the fair value of the warrant and derivative liabilities as of December 31, 2013 resulting in non-cash cost of $4.5 million for 2013. For 2014, the net fair value of all these liabilities increased resulting in non-cash expense of $2.0 million for 2014. The increase in the fair value of these liabilities in 2014 is primarily due to our increasing share price and the related enterprise valuation. Due to the expiration of the redemption and put option features included in the Bridge Loan Warrants, Financing Warrant and Consulting Warrant as of the IPO Date and the conversion of the Senior Convertible Notes upon the IPO which terminated the derivative liability, there will be no further fair value adjustments of such warrants and derivative liabilities in the future.

Warrant Expense. We incurred bridge warrant expense of $560,000 in 2013 and none in 2014. This represents the non-cash expense associated with the original issuance of the Bridge Loan Warrants in the first quarter of 2013 by Resonant LLC. We repaid the Bridge Loans in June 2013. Consequently, we did not incur any bridge warrant expense in 2014 and will not incur further expense for these warrants.

Other Income. Other income consisted of a $1.2 million non-cash gain from the write-off of the derivative liability associated with our Senior Convertible Notes. Due to the conversion of these notes, the derivative liability balance was accounted for as an extinguishment of debt with a portion recognized as a gain and classified in other income for 2014. Consequently, we will not incur any further charges associated with fluctuations in the fair value of the derivative liability.

Income Taxes. We have no revenues and are currently operating at a loss. Consequently, our only tax liabilities for both periods were for minimum taxes in the States where we conduct business.

Liquidity and Capital Resources

Financing Activities

We have earned no revenue since inception. Our operations have been funded with capital contributions, debt and equity.

We began operations in July 2012 with initial capital contributions from our founders and STI. The founders contributed $200,000 and agreed to work full-time without pay until we secured adequate funding. STI contributed a patent portfolio, software, equipment, temporary office space and an early version of our first development agreement. The founders received Class B units in Resonant LLC, but later exchanged their Class B units for common stock of Resonant Inc. STI received Class C units in Resonant LLC, but later exchanged its Class C units for the $2.4 million Subordinated Convertible Note of Resonant Inc.

The Bridge Loans provided $200,000 of additional funding during the first and second quarters of 2013.

We raised $6.3 million of net proceeds from the sale of Senior Convertible Notes in June 2013, and we used part of the proceeds to repay the Bridge Loans. In June 2014, we sold 3,105,000 shares of common stock in an IPO generating net proceeds of $16.2 million.

We had current assets of $13.9 million and current liabilities of $720,000 at December 31, 2014, resulting in working capital of $13.2 million. This compares to a working capital deficit of $8.8 million at December 31, 2013. The change in working capital is primarily the result of the net proceeds from our IPO and the related conversion of all outstanding notes to common stock.

Our principal sources of liquidity consist of existing cash balances and investments of $13.8 million. We believe our current resources will provide sufficient funding for planned operations into the first half of 2016. If we do not generate adequate cash from revenues in 2016 in order to reach positive cash flows, we likely will be required to obtain additional financing to continue with our plan of commercialization. There is no assurance that additional financing (public or private) will be available on acceptable terms or at all. If we issue additional equity securities to raise funds, 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. If we cannot raise any 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.

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Our consolidated financial statements have been prepared assuming that we will continue as a going concern. The factors described above raise substantial doubt about our ability to continue as a going concern. These consolidated financial statements do not include any adjustments that might result from this uncertainty.

Cash Flow Analysis

The consolidated statements of cash flows presented in our consolidated financial statements represent the activities of (a) Resonant LLC, as predecessor company, for the period from January 1, 2013 to June 16, 2013, and (b) Resonant Inc., as successor company, for the period from June 17, 2013 to December 31, 2013 and the year ended December 31, 2014.

Operating activities used cash of $162,000 for the period from January 1, 2013 to June 16, 2013, $1.9 million for the period from June 17, 2013 to December 31, 2013, and $4.6 million for the year ended December 31, 2014. The increase is primarily the result of increased expenses following our first financing in June 2013 and an increase in costs associated with being a public company. These cash uses were partially offset by non-cash related costs for stock-based compensation, fair value adjustments for the warrants and the derivative liability, amortization of deferred financing and debt discount costs.

Investing activities used cash of $76,000 for the period from January 1, 2013 to June 16, 2013, $321,000 for the period from June 17, 2013 to December 31, 2013, and $9.1 million for the year ended December 31, 2014. The increase of $8.7 million in 2014 consisted primarily of an $8.0 million investment of excess cash balances in a short-term debt instrument, the build-out of our new corporate headquarters, the purchase of equipment and computers due to the increase in employees in 2014 and our investment in patents.

Financing activities provide cash of $201,000 for the period from January 1, 2013 to June 16, 2013, $5.5 million for the period from June 17, 2013 to December 31, 2013, and $16.2 million for the year ended December 31, 2014. The 2013 figures are primarily the result of the net proceeds from the issuance of the Senior Convertible Notes in June 2013. For 2014, cash provided by financing activities was primarily the result of the proceeds from our IPO of $18.6 million offset by $2.4 million in cash expended for IPO costs in 2014.

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. No demands have been made upon us to provide indemnification under such agreements and there are no claims that we are aware of that could have a material effect on our consolidated balance sheets, consolidated statements of operations, consolidated statements of stockholders equity (deficit) or consolidated statements of cash flows.

Operating Leases

We lease various office facilities, including our corporate headquarters in Santa Barbara, California and our office in Burlingame, California, under operating lease agreements that expire through July 2017. 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, 2014, 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, 2014:

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	Payments Due by Period				
Contractual Obligations	**Total**	**Less Than 1 Year**	**1-3 Years**	**3-5 Years**	**More Than 5 Years**
Operating lease commitments	$ 411,000	$ 183,000	$ 228,000	None	None

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.

On July 8, 2014, we invested in a debt security that we have classified as held-to-maturity as we currently meet the criteria for this debt investment classification. As of December 31, 2014, the amortized cost value is $7,999,553 with an unrealized gain of $19,889 and a fair value

of $7,999,778. The debt security matured on January 5, 2015 and is a foreign debt obligation. We have not recognized an other-than-temporary impairment gain or loss or a comprehensive gain or loss to-date. We have recorded investment income of $19,664 for the year ended December 31, 2014 associated with this debt security. There were no debt securities in 2013.

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, accounts payable, and accrued liabilities, approximate fair value due to their short maturities.

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The carrying amount of our warrant liabilities and our derivative liability related to the Senior Convertible Notes were marked to market each reporting date until the warrants and derivative liability were settled. Prior to the IPO Date, the fair value of the financing warrant liability and derivative liability were estimated using a Monte Carlo option-pricing model, which takes into consideration the market values of comparable public companies, considering among other factors, the use of multiples of earnings, and adjusted to reflect the restrictions on the ability of our securities to trade in an active market. As of the IPO Date, the fair value of the remaining warrants and the financing warrant liability and derivative liability, were estimated using a Black-Scholes option valuation technique as it embodies all of the requisite assumptions (including trading volatility, remaining term to maturity, market price, strike price, and risk free rates) necessary to fair value these instruments. Estimates of expected term were based on the estimated time to expiration. The risk-free interest rate was based on the U.S. Treasury yield for a term consistent with the estimated expected term. We have never declared or paid any cash dividends and do not presently plan to pay cash dividends in the foreseeable future. Consequently, we use an expected dividend yield of zero. Our expected volatility was derived from the historical volatilities of several public companies in similar industries because we have limited information on the volatility of the price of our common stock because we have no trading history. When making the selections of our industry peer companies to be used in the volatility calculation, we consider operational area, size, business model, industry and the business of potential comparable companies. These historical volatilities are weighted based on certain qualitative factors and combined to produce a single volatility factor. All of the warrant liabilities and the derivative liability are valued using level 3 inputs.

Prior to the IPO Date, the determination of the value of our common stock, and for purposes of establishing the value of the warrants and derivatives related to the bridge financing, the senior convertible notes, the subordinated convertible notes and the consulting warrants, management considered several factors and the probability of achieving each one of them. The significant factors were (1) securing adequate funding to complete the single-band commercial surface acoustic wave, or SAW, duplexer design under the terms of the development agreement with our first customer; (2) developing a working duplexer product that meets the specifications of our first customer; and (3) our first customer exercising its licensing option if the duplexer product met its specifications. The probabilities for achieving each of these factors changed during the periods from January 31, 2013 to June 16, 2013 and December 31, 2013. These probabilities were affected by our ability to hire technical personnel to develop the technology and design the product, establish a management team to develop a business plan, secure financing, execute the business plan, and interact with our first customer to achieve the milestones contained in the development agreement with our first customer. As we made progress in each of these areas over the period from January 31, 2013 through December 31, 2013 the probability elements in each of these factors changed and increased. These increases resulted in higher valuations of our common stock and accordingly the values of the warrants and derivatives at each of these periods. Following the IPO Date, we used the current market value of our common stock to assist in determining the value of the warrants and stock options using the Black-Scholes option valuation model.

Deferred Finance Costs Costs relating to our senior convertible note and subordinated convertible note financings were capitalized and amortized over the term of the related debt using the effective interest method. Due to the conversion of these notes to common stock in connection with the IPO, the unamortized deferred finance costs of $358,000 were fully expensed as of the IPO Date. Amortization of deferred financing costs, including the write-off due to the conversion, were charged to interest expense and totaled $51,000, and $745,000, respectively, for the period from June 17, 2013 to December 31, 2013 and for the twelve months ended December 31, 2014. There was no expense for the period January 1, 2013 to June 16, 2013.

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*.

Derivative Instruments We account for free-standing derivative instruments and hybrid instruments that contain embedded derivative features in accordance with ASC Topic 815, *Accounting for Derivative Instruments and Hedging Activities*, or ASC 815, as well as related interpretations of this topic. In accordance with this topic, derivative instruments and hybrid instruments are recognized as either assets or liabilities in the balance sheet and are measured at fair values with gains or losses recognized in earnings. Embedded derivatives that are not clearly and closely related to the host contract are bifurcated and are recognized at fair value with changes in fair value recognized as either a gain or loss in earnings. We determine the fair value of derivative instruments and hybrid

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instruments based on available market data using appropriate valuation models, giving consideration to all of the rights and obligations of each instrument.

We estimate fair values of derivative instruments and hybrid instruments using various techniques (and combinations thereof) that are considered to be consistent with the objective of measuring fair values. In selecting the appropriate technique, we consider, among other factors, the nature of the instrument, the market risks that it embodies and the expected means of settlement. For less complex instruments, such as free-standing warrants, we generally use the Black-Scholes option valuation model, adjusted for the effect of dilution, because it embodies all of the requisite assumptions (including trading volatility, estimated terms, dilution and risk free rates) necessary to fair value these instruments. Estimating fair values of derivative financial instruments requires the development of significant and subjective estimates that may, and are likely to, change over the duration of the instrument with related changes in internal and external market factors. Under ASC 815, increases in the trading price of our common stock and increases in fair value during a given financial quarter result in the application of non-cash derivative expense. Conversely, decreases in the trading price of our common stock and decreases in fair value during a given financial quarter would result in the application of non-cash derivative income. In situations where the Black-Scholes option valuation model is not deemed appropriate, we will use a Monte Carlo option-pricing model to determine the fair value of derivative instruments.

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 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, 2014, 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 period January 1, 2013 to June 16, 2013 and the period from June 17, 2013 to December 31, 2013 and for year ended December 31, 2014, 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.

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

Development Stage Enterprise Effective June 2014 the FASB issued amendment 2014-10 for ASC Topic 915, *Development Stage Entities*. The amendment has eliminated the reporting distinction for development stage entities. We have adopted this amendment effective with our June 30, 2014 reporting period.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not applicable.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Resonant Inc.

We have audited the accompanying consolidated balance sheets of Resonant Inc. (the Company), as of December 31, 2013 and December 31, 2014, and the related consolidated statements of operations, stockholders equity (deficit) and cash flows of Resonant LLC for the period January 1, 2013 to June 16, 2013, and of Resonant Inc. for the period June 17, 2013 to December 31, 2013 and the year ended December 31, 2014. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company was not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, 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. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Resonant Inc. as of December 31, 2013 and 2014, and the results of operations and cash flows of Resonant LLC for the period January 1, 2013 to June 16, 2013, and Resonant Inc. for the period June 17, 2013 to December 31, 2013 and the year ended December 31, 2014, in conformity with accounting principles generally accepted in the United States of America.

/s/ Squar, Milner, Peterson, Miranda & Williamson, LLP

Los Angeles, California

March 26, 2015

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PART I: FINANCIAL INFORMATION

Item 1. Financial Statements

RESONANT INC.

Consolidated Balance Sheets

	December 31, 2013	December 31, 2014
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	$ 3,338,979	$ 5,802,593
Prepaid expenses and other current assets	182,930	105,815
Investment held-to-maturity		7,999,553
Deferred finance costs	745,039	
TOTAL CURRENT ASSETS	4,266,948	13,907,961
PROPERTY AND EQUIPMENT		
Fixed assets	231,120	1,248,509
Less: Accumulated depreciation and amortization	(7,360)	(207,761)
PROPERTY AND EQUIPMENT, NET	223,760	1,040,748
NONCURRENT ASSETS		
Patents and domain names, net	379,703	500,010
Other assets	11,782	14,656
TOTAL NONCURRENT ASSETS	391,485	514,666
TOTAL ASSETS	$ 4,882,193	$ 15,463,375
LIABILITIES AND STOCKHOLDERS S EQUITY (DEFICIT)		
CURRENT LIABILITIES		
Accounts payable	$ 91,974	$ 222,893
Accrued expenses	163,375	145,785
Accrued salaries and payroll related expenses	13,504	314,889
Deferred rent, current portion	3,876	36,204
Derivative liabilities	5,056,502	
Convertible notes	7,740,843	
TOTAL CURRENT LIABILITIES	13,070,074	719,771
LONG-TERM LIABILITIES		
Warrants	3,276,084	
Deferred rent		53,665
TOTAL LIABILITIES	16,346,158	773,436
Commitments and contingencies (Note 9)		
STOCKHOLDERS EQUITY (DEFICIT)		

Common stock, $0.001 par value, 10,000,000 authorized and 999,999 outstanding as of December 31, 2013, and 47,000,000 authorized and 6,931,984 outstanding as of December 31, 2014		1,000		6,931
Preferred stock, $0.001 par value, none authorized or outstanding as of December 31, 2013, and 3,000,000 authorized and none outstanding as of December 31, 2014				
Additional paid-in capital		1,000		35,880,183
Accumulated deficit		(11,465,965)		(21,197,175)
TOTAL STOCKHOLDERS EQUITY (DEFICIT)		(11,463,965)		14,689,939
TOTAL LIABILITIES AND STOCKHOLDERS EQUITY (DEFICIT)	$	4,882,193	$	15,463,375

See Notes to Consolidated Financial Statements

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RESONANT INC.

Consolidated Statements of Operations

	Resonant LLC Period from January 1, 2013 to June 16, 2013	Resonant Inc. Period from June 17, 2013 to December 31, 2013	Resonant Inc. for the Year Ended December 31, 2014
REVENUES	$	$	$
OPERATING EXPENSES			
Research and development expenses	195,403	926,095	2,947,485
General and administrative expenses	135,993	1,485,313	2,931,860
Depreciation and amortization	4,905	14,424	219,736
TOTAL OPERATING EXPENSES	336,301	2,425,832	6,099,081
OPERATING LOSS	(336,301)	(2,425,832)	(6,099,081)
OTHER INCOME (EXPENSE)			
Interest and investment income		1,327	28,816
Interest expense	(199,961)	(1,356,752)	(2,807,862)
Fair value adjustments to warrant and derivative liabilities		(4,520,736)	(2,015,599)
Bridge warrant expense	(247,669)	(312,486)	
Other income (expense)		(333)	1,163,772
TOTAL OTHER INCOME (EXPENSE)	(447,630)	(6,188,980)	(3,630,873)
LOSS BEFORE INCOME TAXES	(783,931)	(8,614,812)	(9,729,954)
Provision for income taxes	(800)	(1,256)	(1,256)
NET LOSS	$ (784,731)	$ (8,616,068)	$ (9,731,210)
NET LOSS PER SHARE - BASIC AND DILUTED	$	$ (8.62)	$ (2.16)
Weighted average shares outstanding basic and diluted		**999,999**	**4,510,242**

See Notes to Consolidated Financial Statements

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RESONANT INC.

Consolidated Statements of Stockholders Equity (Deficit)

of Resonant LLC for the Period from January 1, 2013 to

June 16, 2013, and Resonant Inc. for the Period from June 17, 2013

to December 31, 2013 and the Year Ended December 31, 2014

	Class B Member s		Class C Member s		Common Stock		Additional		Total
	Units	Capital	Units	Capital	Shares	Amount	Paid-in Capital	Accumulated Deficit	Stockholders Equity (Deficit)
Balance, December 31, 2012	500,000	$	300,000	$ 46,351		$	$	$	$ 46,351
Capital contributions				22,338					22,338
Sale of warrants							1,000		1,000
Net loss				(68,689)				(716,042)	(784,731)
Balance, June 16, 2013	500,000		300,000				1,000	(716,042)	(715,042)
Exchange of Class C member s units for subordinated note			(300,000)					(2,133,855)	(2,133,855)
Exchange of Class B member s units for subordinated note	(500,000)				999,999	1,000	(1,000)		
Sale of warrants							1,000		1,000
Net loss								(8,616,068)	(8,616,068)
Balance, December 31, 2013					999,999	1,000	1,000	(11,465,965)	(11,463,965)
Sale of common stock in our initial public offering					3,105,000	3,105	18,626,895		18,630,000
Offering costs of our initial public offering							(2,388,026)		(2,388,026)
Reclassification of warrant liabilities							3,658,411		3,658,411
Conversion of convertible notes					2,787,667	2,787	9,397,213		9,400,000