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

FORM 10-K

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

For the fiscal year ended June 30, 2020

or

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

For the transition period from ___________________ to ___________________

Commission file number: **001-38029**

AKOUSTIS TECHNOLOGIES, INC.
(Exact name of registrant as specified in its charter)

Delaware	**33-1229046**
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
9805 Northcross Center Court, Suite A Huntersville, NC	**28078**
(Address of principal executive offices)	(Postal Code)

Registrant's telephone number, including area code: **1-704-997-5735**

Securities registered under Section 12(b) of the Act:

Title of Each Class:	Trading Symbol	Name of each exchange on which registered:
Common Stock, $0.001 par value	**AKTS**	**The Nasdaq Stock Market LLC (Nasdaq Capital Market)**

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large Accelerated Filer ☐	Accelerated Filer ☐
Non-Accelerated Filer ☒	Smaller reporting company ☒
	Emerging growth company ☐

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

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

The aggregate market value of the registrant's common stock, par value $0.001 per share ("Common Stock"), held by non-affiliates on December 31, 2019 was approximately $250.4 million. For purposes of this computation, shares of Common Stock held by all officers, directors, and beneficial owners of 10% or more of the outstanding Common Stock were excluded because such persons may be deemed to be affiliates of the registrant. Such determination should not be deemed an admission that such persons are, in fact, affiliates of the registrant.

As of August 17, 2020, there were 38,067,550 shares of Common Stock issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant intends to file a definitive proxy statement pursuant to Regulation 14A within 120 days after the end of the fiscal year ended June 30, 2020. Portions of such proxy statement are incorporated by reference into Part III of this Form 10-K.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K (this "Report") contains forward-looking statements that relate to our plans, objectives, estimates, and goals. Any and all statements contained in this report that are not statements of historical fact may be deemed to be forward-looking statements. Terms such as "may," "will," "might," "would," "should," "could," "project," "estimate," "predict," "potential," "strategy," "anticipate," "attempt," "develop," "plan," "help," "seek," "believe," "continue," "intend," "expect," "future," and terms of similar import (including the negative of any of the foregoing) may identify forward-looking statements. However, not all forward-looking statements may contain one or more of these identifying terms. Forward-looking statements in this report may include, without limitation, statements regarding (i) the plans and objectives of management for future operations, including plans or objectives relating to the development of commercially viable radio frequency ("RF") filters, (ii) projections of income (including income/loss), earnings (including earnings/loss) per share, capital expenditures, dividends, capital structure or other financial items, (iii) our future financial performance, including any such statement contained in the management's discussion and analysis of financial condition or in the results of operations included pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC"), (iv) our ability to efficiently utilize cash and cash equivalents to support our operations for a given period of time, (v) our ability to engage customers while maintaining ownership of our intellectual property, and (vi) the assumptions underlying or relating to any statement described in (i), (ii), (iii), (iv) or (v) above.

Forward-looking statements are not meant to predict or guarantee actual results, performance, events or circumstances and may not be realized because they are based upon our current projections, plans, objectives, beliefs, expectations, estimates and assumptions and are subject to a number of risks and uncertainties and other influences, many of which are beyond our control. Actual results and the timing of certain events and circumstances may differ materially from those described by the forward-looking statements as a result of these risks and uncertainties. Factors that may influence or contribute to the inaccuracy of the forward-looking statements or cause actual results to differ materially from expected or desired results may include, without limitation,

- our limited operating history,
- our inability to generate revenues or achieve profitability,
- the impact of the COVID-19 pandemic on our operations, financial condition and the worldwide economy, including our ability to access the capital markets,
- our inability to obtain adequate financing and sustain our status as a going concern,
- our inability to service the debt represented by our $25.0 million principal amount of senior convertible notes due in 2023,
- the results of our research and development ("R&D") activities,
- our inability to achieve acceptance of our products in the market,
- general economic conditions, including upturns and downturns in the industry,
- existing or increased competition,
- our inability to successfully scale the New York fabrication facility and related operations into our business and to maintain a successful fabrication operation while maintaining quality control and assurance and avoiding delays in output,
- contracting with customers and other parties with greater bargaining power and agreeing to terms and conditions that may adversely affect our business,
- risks related to doing business in foreign countries,
- any security breaches or other disruptions compromising our proprietary information and exposing us to liability,
- our limited number of patents,
- failure to obtain, maintain and enforce our intellectual property rights,
- our inability to attract and retain qualified personnel,
- results of any present or future arbitration or litigation,
- our reliance on third parties to complete certain processes in connection with the manufacture of our products,
- product quality and defects,
- our ability to market and sell our products,

- our failure to innovate or adapt to new or emerging technologies, including in relation to our competitors,
- our failure to comply with regulatory requirements,
- stock volatility and illiquidity,
- our failure to implement our business plans or strategies,
- our failure to maintain effective internal control over financial reporting, and
- our failure to obtain and maintain the Trusted Foundry accreditation of our New York fabrication facility .

A description of the risks and uncertainties that could cause our actual results to differ materially from those described by the forward-looking statements in this Report appears in the section captioned “Risk Factors” and elsewhere in this Report.

Readers are cautioned not to place undue reliance on forward-looking statements because of the risks and uncertainties related to them and to the risk factors. Except as may be required by law, we do not undertake any obligation to update the forward-looking statements contained in this Report to reflect any new information or future events or circumstances or otherwise.

DEFINITIONS

When used in this Report, the terms, “we,” “Akoustis,” the “Company,” “our,” and “us” refers to Akoustis Technologies, Inc., a Delaware corporation, and its wholly owned consolidated subsidiary, Akoustis, Inc., also a Delaware corporation.

Glossary

The following is a glossary of technical terms used herein:

- **Acoustic wave** - a mechanical wave that vibrates in the same direction as its direction of travel.
- **AlN** - Aluminum Nitride.
- **Acoustic wave filter** - an electromechanical device that provides radio frequency control and selection, in which an electrical signal is converted into a mechanical wave in a device constructed of a piezoelectric material and then back to an electrical signal.
- **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, typically vertical or perpendicular to the surface of a piezoelectric material.
- **Digital baseband** - the digital transceiver, which includes the main processor for the communication device.
- **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.
- **Filter** - a series of interconnected resonators designed to pass (or select) a desired radio frequency signal and block unwanted signals.

- **Group III element nitrides** - a dielectric material comprised of group IIIA element, such as boron (B), aluminum (Al) or gallium (Ga), combined with group 5A (or VA nitrogen) to form a compound semiconductor nitride such as BN, AlN, or GaN. For resonators, the dielectric is typically chosen based upon the piezoelectric constant of the material in order to generate the highest electromechanical coupling.

- **Insertion Loss** - the power losses associated with inserting a BAW filter into a circuit.

- **Lossy** - resistive losses that result in heat generation.

- **Metrology** - techniques used to evaluate materials, devices and circuits.

- **Monolithic topology** - a description of an electrical circuit whereby all the elements of the circuit are fabricated at the same time using the same process flow.

- **Power Amplifier Duplexer (PAD)** - an RF module containing a power amplifier and duplex filter components for the RFFE of a smartphone.

- **Piezoelectric materials** - certain solid materials (such as crystals and certain ceramics) that produce a voltage in response to applied mechanical stress, or that deform when a voltage is applied to them.

- **Quality factor, or Q** - energy stored divided by the energy dissipated per cycle. Higher Q represents a higher caliber of resonance and implies mechanical and electrical factors responsible for energy dissipation are minimal. For a given amount of energy stored in a resonator, Q represents the number of cycles resonance will continue without additional input of energy into the system.

- **Resonator** - a device whose impedance sharply changes over a narrow frequency range and is characterized by one or more 'resonance frequency' due to a standing wave across the resonator's electrodes. The vibrations in a resonator can be characterized by mechanical "acoustic" waves which travel without a characteristic sound velocity. Resonators are the building blocks for RF filters used in mobile wireless devices.

- **RF** - radio frequency.

- **RF front-end (RFFE)** - the circuitries in a mobile device responsible for processing the analog radio signals; located between the device's antenna and the digital baseband.

- **RF spectrum** - a defined range of frequencies.

- **Surface acoustic wave (SAW)** - an acoustic sound wave traveling horizontally along the surface of a piezoelectric material.

- **TDD LTE** - Time Division Duplex- Long-Term Evolution or a wireless standard which shares the bandwidth between transmit and receive.

- **Tier one** - a supplier or OEM with substantial market share.

- **Tier two** - a supplier or OEM with an established but not substantial market share.

- **Trusted Foundry**- The Trusted Foundry Program was initiated by the Department of Defense in 2004 to ensure mission-critical national defense systems access to leading-edge integrated circuits from secure, domestic sources. Defense Microelectronics Activity (DMEA) is the manager of the Trusted Foundry Program for the U.S. Department of Defense (DoD). It is a joint DoD / National Security Agency (NSA) program and is administered by the NSA's Trusted Access Program Office (TAPO).

- **Wafer** - a thin slice of semiconductor material used in electronics for the fabrication of integrated circuits.

PART I

ITEM 1. BUSINESS

Overview

Akoustis® is an emerging commercial product company focused on developing, designing, and manufacturing innovative RF filter solutions for the wireless industry, including for products such as smartphones and tablets, network infrastructure equipment, WiFi Customer Premise Equipment (“CPE”) and defense applications. Filters are critical in selecting and rejecting signals, and their performance enables differentiation in the modules defining the RF front-end (“RFFE”). Located between the device’s antenna and its digital backend, the RFFE is the circuitry that performs the analog signal processing and contains components such as amplifiers, filters and switches. We have developed a proprietary microelectromechanical system (“MEMS”) based bulk acoustic wave (“BAW”) technology and a unique manufacturing process flow, called “XBAW”, for our filters produced for use in RFFE modules. Our XBAW™ filters incorporate optimized high purity piezoelectric materials for high power, high frequency and wide bandwidth operation. We are developing RF filters for 4G/LTE, 5G, WiFi and defense bands using our proprietary resonator device models and product design kits (PDKs). As we qualify our RF filter products, we are engaging with target customers to evaluate our filter solutions. Our initial designs target UHB, sub 7 GHz 4G/LTE, 5G, WiFi and defense bands. We expect our filter solutions will address problems (such as loss, bandwidth, power handling, and isolation) created by the growing number of frequency bands in the RFFE of mobile devices, infrastructure and premise equipment to support 4G/LTE, 5G, and WiFi. We have prototyped, sampled and begun commercial shipment of our single-band low-loss BAW filter designs for 4G/LTE frequency bands, 5G frequency bands and 5GHz WiFi bands which are suited to competitive BAW solutions and historically cannot be addressed with low-band, lower power handling surface acoustic wave (“SAW”) technology.

We own and/or have filed applications for patents on the core resonator device technology, manufacturing facility and intellectual property (“IP”) necessary to produce our RF filter chips and operate as a “pure-play” RF filter supplier, providing discrete filter solutions direct to Original Equipment Manufacturers (“OEMs”) and aligning with the front-end module manufacturers that seek to acquire high performance filters to expand their module businesses. We believe this business model is the most direct and efficient means of delivering our solutions to the market.

Technology. Our device technology is based upon bulk-mode acoustic resonance, which we believe is superior to surface-mode resonance for high-band and ultra-high-band (“UHB”) applications that include 4G/LTE, 5G, WiFi, and defense applications. Although some of our target customers utilize or manufacture the RFFE module, they may lack access to critical UHB filter technology that we produce, which is necessary to compete in high frequency applications.

Manufacturing. We currently manufacture our high performance RF filter circuits, using our first generation XBAW™ wafer process, in our 120,000-square foot wafer-manufacturing facility located in Canandaigua, New York, which we acquired in June 2017.

Intellectual Property. As of August 17, 2020, our IP portfolio included 33 patents, including a blocking patent that we have licensed from Cornell University. Additionally, as of August 17, 2020, we have 71 pending patent applications. These patents cover our XBAW ™ RF filter technology from raw materials through the system architectures. Where possible, we leverage both federal and state level R&D grants to support development and commercialization of our technology.

By designing, manufacturing, and marketing our RF filter products to mobile phone OEMs, defense OEMs, network infrastructure OEMs, and WiFi CPE OEMs, we seek to enable broader competition among the front-end module manufacturers.

Since we own and/or have filed applications for patents on the core technology and control access to our intellectual property, we expect to offer several ways to engage with potential customers. First, we intend to engage with multiple wireless markets, providing standardized filters that we design and offer as standard catalog components. Second, we expect to deliver unique filters to customer-supplied specifications, which we will design and fabricate on a customized basis. Finally, we may offer our models and design kits for our customers to design their own filters utilizing our proprietary technology.

To succeed, we must convince mobile phone OEMs, RFFE module manufacturers, cellular infrastructure OEMs, WiFi CPE OEMs and defense customers to use our XBAW™ filter technology in their systems and modules. However, since there are two dominant BAW filter suppliers in the industry that have high-band technology, and both utilize such technology as a competitive advantage at the module level, we expect customers that lack access to high-band filter technology will be open to engage with our pure-play filter company.

We plan to pursue RF filter design and R&D development agreements and potentially joint ventures with target customers and other strategic partners, although we cannot guarantee we will be successful in these efforts. These types of arrangements may subsidize technology development costs and qualification, filter design costs, and offer complementary technology and market intelligence and other avenues to revenue. However, we intend to retain ownership of our core technology, intellectual property, designs, and related improvements. We expect to pursue development of catalog designs for multiple customers and to offer such catalog products in multiple sales channels.

Impact of COVID-19 on our Business

Although the ultimate impact of the COVID-19 pandemic on our business is unknown, in an effort to protect the health and safety of our employees, we have taken proactive, precautionary action and adopted social distancing measures, daily self-health attestations, and mandatory mask policies at our locations, including when warranted by state and local guidelines, the implementation of new staffing plans in our facilities whereby certain employees work remotely and the remaining on-site force is divided into multiple shifts or segregated in different parts of the facility. Our actions continue to evolve in response to new government measures and scientific knowledge regarding COVID-19. In an effort to contain COVID-19 or slow its spread, governments around the world have also enacted various measures, including orders to close all businesses not deemed "essential," isolate residents to their homes or places of residence, and practice social distancing when engaging in essential activities. These measures have impacted the method and timing of certain business meetings and deliverables to certain customers, as well as our ability to obtain certain materials, equipment and services from suppliers. For example, Executive Orders issued by the Governor of New York introduced potential delays in the procurement of installation and maintenance services from vendors without personnel located in New York, New Jersey or Connecticut.

We anticipate that these actions and the global health crisis caused by COVID-19 will negatively impact business activity across the globe. We have observed delays, declining demand and price reductions in the electronics industry as business and consumer activity decelerates across the globe. When COVID-19 is demonstrably contained, we anticipate a rebound in economic activity, depending on the rate, pace, and effectiveness of the containment efforts deployed by various national, state, and local governments; however, the timing and extent of any such rebound is uncertain.

We will continue to actively monitor the situation and may take further actions altering our business operations that we determine are in the best interests of our employees, customers, partners, suppliers, and stakeholders, or as required by federal, state, or local authorities. It is not clear what the potential effects any such alterations or modifications may have on our business, including the effects on our customers, employees, and prospects, or on our financial results beyond fiscal year 2020.

Business Developments

On July 16, 2019, the Company announced a new purchase order from a strategic Defense customer for five new filter solutions in the 2-4 GHz frequency spectrum. In late July, Akoustis announced its design lock and pre-production of its 5.6GHz WiFi BAW filter solution which complements the Company's existing 5.2GHz WiFi filter product.

On August 13, 2019, Akoustis announced a follow-on order from a tier-1 wireless telecommunications customer to develop two additional 5G Mobile filter solutions. In early September 2019, The Company announced a first shipment of its pre-production 5.6GHz XBAW filter product to tier-1 WiFi OEM.

On September 19, Akoustis announced its new n79 RF filter along with shipment of first samples to a new global tier-1 OEM. By the end of September, Akoustis shipped its first tandem 5.2 GHz/5.6 GHz WiFi BAW filters to an existing tier-1 SoC customer.

On November 19, 2019 Akoustis shipped 60,000 5.6 GHz filters to an existing distributor partner. In early December 2019, the Company received its first 5G network infrastructure filter order for small cell base stations.

On December 16, 2019, the Company shipped two new XBAW filters to its 5G mobile customer, bringing the total number of mobile filters shipped to the customer to three. In December 2019, Akoustis also shipped the first sample of its wafer level package (WLP), with the small form factor designed to penetrate the mobile device market.

At the end of December 2019, Akoustis shipped five new S-band filters in the 2-4 GHz range to a defense customer for phased array radar applications. The Company also shipped its tandem 5.2/5.6 GHz WiFi filter solutions to a tier-1 OEM and received a second 5G massive MIMO network infrastructure development order from a tier-1 customer.

On January 7, 2020, the Company announced that it had received an order and shipped its 5.2 GHz and 5.6 GHz coexistence WiFi filters to an original equipment manufacturer (OEM).

On January 30, 2020, Akoustis announced that it had locked the design of its Citizen's Broadband Radio Service 5G network infrastructure filter and had shipped samples to three OEM's.

On February 3, 2020, the Company announced that it had received its first volume commercial order for 5G network infrastructure filters from a small cell base station provider focused on markets in Asia.

In mid-February, Akoustis announced the entry into a new market with an order for the design and development of XBAW filters for a customer for unmanned aircraft systems (UAS), commonly referred to as drones. The filters will be used for control and non-payload communication links.

On April 8, 2020, the Company announced that it had achieved its first non-defense commercial design win for XBAW filters in the 5G small cell network equipment market.

On April 29, 2020, Akoustis announced that it had achieved design locked and shipped initial samples of its first unmanned aircraft system (drone) filter solution.

On May 4, 2020, the Company announced its first design win for 5.2 and 5.6 GHz WiFi coexistence filters to a tier-1 OEM.

On May 8, 2020, Akoustis announced that it completed the development of its third 5G small cell network infrastructure filter solution and shipped samples to its existing tier-1 customer.

On June 2, 2020, the Company announced the addition of Colin Hunt as the new Vice President of Global Sales, a new position at Akoustis.

On June 8, 2020, Akoustis announced the sampling of a new 5.5 GHz XBAW™ filter for the emerging WiFi 6E market. WiFi 6E is a developing standard made possible by the April 23, 2020 FCC ratification of 5.9-7.1 GHz as a new WiFi channel.

On June 11, 2020, the Company announced that it had signed a new strategic agreement with a tier-1 OEM for the development and purchase of new, custom WiFi 6E filters.

Financing

We have earned minimal revenue from operations since inception, and we have funded our operations primarily with issuances of equity and debt securities, as well as development contracts, RF filter and production orders, government grants, MEMS foundry and engineering services. We have incurred losses totaling approximately $103.6 million from our May 2014 inception through June 30, 2020. These losses are primarily the result of material and processing costs associated with developing and commercializing our technology, as well as personnel costs, professional fees (primarily accounting and legal), and other general and administrative ("G&A") expenses. We expect to continue to incur substantial costs for the commercialization of our technology on a continuous basis because our business model involves materials and solid-state device technology development and engineering of catalog and custom filter design solutions.

As of August 17, 2020, the Company had $39.3 million of cash and cash equivalents to fund our operations, including capital expenditures, R&D, commercialization of our technology, development of our patent strategy and expansion of our patent portfolio, as well as to provide working capital and funds for other general corporate purposes. Our anticipated expenses include employee salaries and benefits, capital costs for research and other equipment, costs associated with development activities (including travel and administration), costs associated with the integration and operation of our New York wafer fabrication facility and related operations, legal expenses, sales and marketing costs, G&A expenses, and other costs typically associated with an early stage, public technology company. We anticipate increasing the number of employees; however, this is highly dependent on the nature of our development efforts, and our success in commercialization. We anticipate adding employees for R&D in both our New York and North Carolina facilities, as well as for G&A functions, to support our efforts. We expect capital expenditures to be between $11 million and $16 million for the purchase of equipment and software during the next 12 months. Commercial development of new technology, by its nature, is unpredictable. The amounts 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, R&D, market conditions and changes in or revisions to our marketing strategies. Although we will undertake development efforts with commercially reasonable diligence, and we believe that cash and cash equivalents on hand as of August 17, 2020 will be sufficient to fund our operations beyond the following 12 months, there can be no assurance that our current cash position will be sufficient to enable us to commercialize our technology to the extent needed to create future sales to sustain operations. If our current cash is insufficient for these purposes and we are unable to source additional funds on terms acceptable to the Company (or at all), or we experience costs in excess of estimates to continue our R&D plan, it is possible that we would not have sufficient resources to continue as a going concern and we may be required to curtail or suspend our operations. Even if we are able to source sufficient funds to continue as a going concern, our technology may not be accepted, we may never earn revenues sufficient to support our operations, and we may never be profitable.

Recent Financing Activity

During the year ended June 30, 2020, the Company sold a total of 5,520,000 shares of its common stock at a price to the public of $6.25 per share for aggregate gross proceeds of $34.5 million before deducting the underwriting discount and offering expenses payable by the Company of approximately $2.3 million.

Additionally, on May, 8, 2020 the Company entered into an ATM Equity Offering℠ Sales Agreement with BofA Securities, Inc. and Piper & Sandler & Co. pursuant to which the Company may sell from time to time shares of its common stock having an aggregate offering price of up to $50,000,000 (the "ATM Program"). During the year ended June 30, 2020, the Company sold a total of 1,392,661 shares of its common stock at a weighted average price to the public of $8.02 per share through the ATM Program for aggregate gross proceeds of approximately $11.2 million, before deducting compensation paid to the sales agents of approximately $0.2 million and other offering expenses of approximately $0.2 million.

On May 20, 2020, Akoustis, Inc., the operating subsidiary of the Company, issued a promissory note (the "Promissory Note") in favor of Bank of America, NA (the "Lender") that provides for a loan in the principal amount of $1.6 million (the "PPP Loan") pursuant to the Paycheck Protection Program (the "PPP") under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"), which is administered by the United States Small Business Administration (the "SBA"). The PPP Loan is scheduled to mature two years from the date of funding of the PPP Loan (the "Maturity Date") and accrues interest at a rate of 1.00% per annum.

Our Technology

Current RF acoustic wave filters utilize technologies that are limited by the piezoelectric material physical properties, the resonator device structure and/or the manufacturing process technology. Existing BAW filters use an “acoustic wave ladder” that is based on a monolithic topology approach using lossy polycrystalline materials. By contrast, our XBAW technology uses high purity materials, which provides high performance acoustic properties. We have fabricated resonators that demonstrate the feasibility of our approach and believe our technology will yield a new generation of high frequency RF filter products.

XBAW technology consists of novel high purity piezoelectric materials, which are fabricated into bulk-mode, acoustic wave resonators and RF filters. Our innovative piezoelectric materials contain high-purity Group III element nitride materials and possess a unique signature, which can be detected by conventional material metrology tools. We utilize analytical modeling techniques to aid in the design and internal manufacturing of our materials, whereby the raw substrate materials utilized in our XBAW process are sourced from a third party. Once our filter designs are simulated and ready to manufacture, we supply our NY fabrication facility raw materials, a mask design file, and a unique process sequence in order to fabricate our resonators and filters. We hold several issued and pending patents on our wafer process flow, which is compatible with wafer level packaging (WLP) that allows for low profile, cost effective filters to be produced.

Challenges Facing the Mobile Device Industry

Rising consumer demand for always-on wireless broadband connectivity is creating an unprecedented need for high performance RFFE modules for mobile devices. Mobile devices such as smartphones, tablets and wearables are quickly becoming the primary means of accessing the Internet, driving the Internet of Things (IoT). The rapid growth in mobile data traffic is testing the limits of existing wireless bandwidth. Carriers and regulators have responded by opening new spectrums of RF frequencies, driving up the number of frequency bands in mobile devices. This substantial increase in frequency bands has created a demand for more filters, as well as a demand for filters with higher selectivity. The global transition to LTE and adoption of LTE-Advanced with more sophisticated carrier aggregation and multiple-input, multiple-output (MIMO) techniques will continue to push the requirements for increased supply of high-performance filters. Furthermore, the introduction of 5G mobile technologies and their associated frequencies over the next several years will create an even greater need for high-performance, high-frequency filters as the bands being auctioned have primarily been in the 3-6 GHz range, well above the frequencies of current networks.

The new spectrum introduced by 4G/LTE and 5G is driving spectrum licensing at higher frequencies than previous 3G smartphone models. For example, new TDD LTE frequencies allocated for 5G wireless cover frequencies nearly twice as high as those covered in previous generation phones. As a result, the demand for filters represents the single largest opportunity in the RFFE industry, according to a Mobile Experts 2020 report. For traditional “low band” frequencies, SAW filters have been the primary choice, while high band solutions have utilized BAW filters due to their performance and yield. While there are multiple sources of supply for SAW technology, the source of supply for BAW filters is more limited and essentially dominated by two manufacturers worldwide. See “Competition” below.

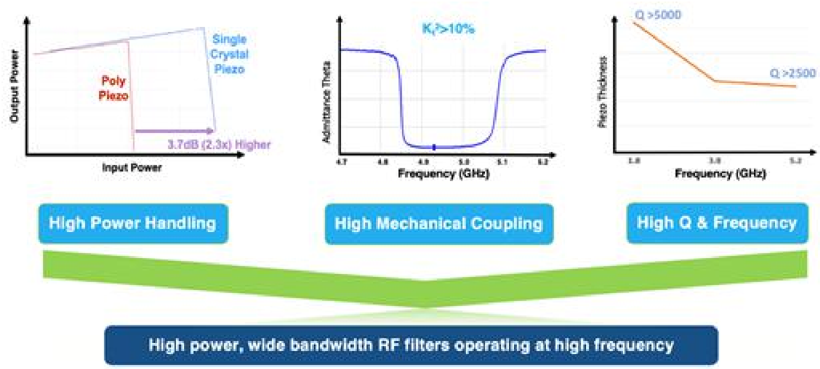
In addition, signal loss of current generation acoustic wave filters is excessively high, and up to half of the transmit power is wasted as heat, which ultimately constrains battery life. Another challenge is that the allocated spectrum for mobile communication bands requires high bandwidth RF filters, which, in turn, requires wide bandwidth core resonator technology. In addition, filters with inferior selectivity either reduce the number or bandwidth of operating bands the mobile device can support or increase the noise in the operating bands. Each of these problems negatively impacts the end-user’s experience when using the mobile device.

The RFFE must meet growing data demands while reducing cost and improving battery life. Our solution involves a new approach to RFFE component manufacturing, enabled by XBAW technology. We expect our technology to produce filters that will reduce the overall system cost and improve performance of the RFFE.

Our Solutions

Our immediate focus is on the commercialization of wide bandwidth RF filters operating in the high frequency spectrum known as the sub 6 GHz bands. Using our XBAW technology, we believe these filters enable new PAD module or RFFE competition for high band modules as well as performance-driven low band applications. Initially, we expect to target select strategic RFFE market leaders as well as tier two mobile phone OEMs and/or RFFE module suppliers. Longer term, our focus will be to expand our market share by engaging with additional mobile phone OEMs and RFFE module manufacturers. We manufacture our wafer technology in our Canandaigua, NY fabrication facility where we continue to focus on the commercialization of our filters using our XBAW technology We plan to develop a series of filter designs to be used in the manufacturing of discrete filters, duplexers or more complex multiplexers targeting the 4G/LTE, 5G, WiFi and defense frequency bands. We believe our filter designs will create an alternative for, and replace, filters currently manufactured using materials with fundamentally inferior performance. Figure 1 below illustrates characterization plots that represent the high power, high bandwidth and high frequency capability of our essential single crystal materials.

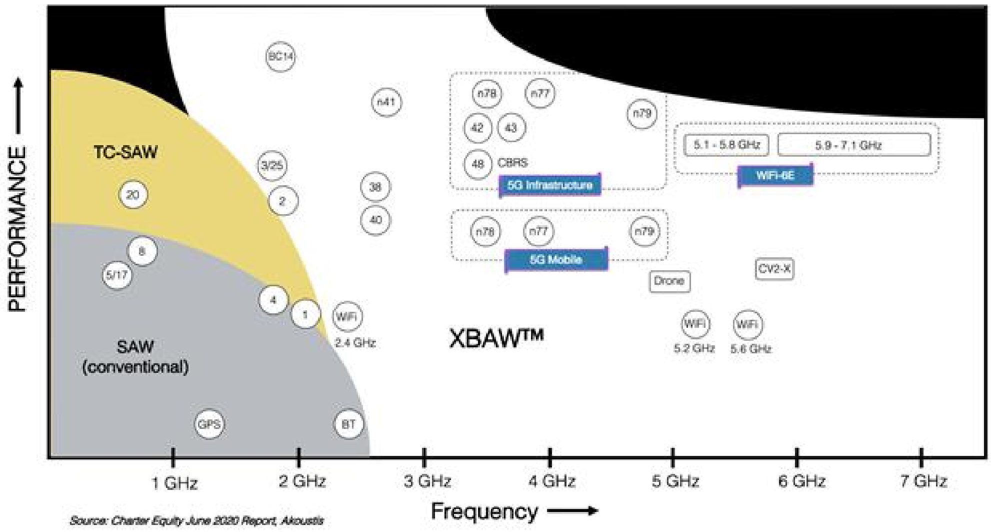
Figure 1-Characteristics of our high purity piezoelectric materials used to fabricate our BAW RF filters.



Single-Band Discrete Designs, Duplexers and Multiplexers

SAW filters are generally desired in modern RFFE because of their performance, small size and low cost. However, traditional SAW ladder designs do not perform well in high frequency bands or bands with closely spaced receive and transmit channels, typical of many new bands. Therefore, BAW filters are preferred for these bands. In our Canandaigua, NY wafer fabrication facility, we fabricate BAW resonators, the building block of BAW filters, that offer high frequency, wide bandwidth and high power performance. We believe the improved efficiency provided by BAW filters will reduce the total cost of RFFE modules, offer efficient use of shared frequency spectrum as well as reduce the battery demand of mobile devices. Additionally, we believe that our XBAW technology will allow for a single manufacturing method that will support all of the BAW filter band range and a significant portion of the SAW band range. Figure 2 below illustrates what we believe will be the frequency range of our XBAW technology.

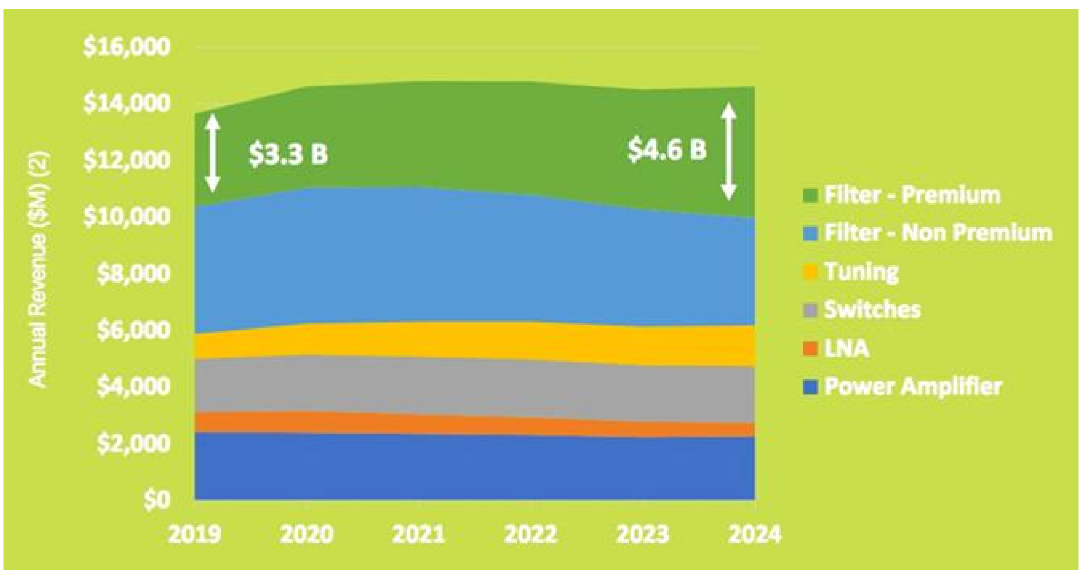
Figure 2- The potential range of our technology.



Pure-Play Filter Provider Enables New Module Competition

Given the high sound velocity in our piezoelectric materials, our technology allows for a wide range of frequency coverage, and we plan to supply filters that will support 4G/LTE, 5G, WiFi and defense bands. We have successfully demonstrated resonators that will support the design and fabrication of 4G/LTE filters, WiFi filters and defense filters, with frequencies adjacent to the emerging 5G mobile auctions. We have transitioned our XBAW technology to high volume manufacturing and aim to be a pure-play filter supplier that will address the increasing RF complexity placed on RFFE manufacturers supporting 4G/LTE 5G,and WiFi. Figure 3 illustrates historical and projected growth in RF complexity.

Figure 3- Projected Increase in Filter content in Mobile Phone Front End Modules (FEMs) from 2019 - 2024 (Source: Mobile Experts 2020).



Commercialization

Our immediate focus is on the commercialization of wide bandwidth RF filters to address the WiFi, Network Infrastructure and Defense bands with innovative single-band designs using our XBAW^{TM} sub 6 GHz RF filter technology. We are currently developing commercial single-band filters through our wafer fabrication facility. We are focused on developing fixed-band filters because we believe these designs present the greatest near-term potential for commercialization of our technology, and that once demonstrated, the facility can be more efficiently readied for production compared to alternative technologies.

Our technology development process consists of the following five phases:

1. Pre-Alpha – Demonstrate basic feasibility/capabilities

2. Alpha – Develop stable recipe (Process freeze) with limited production development

3. Beta – Complete technology qualification (Process qualification) in factory to enable product design

4. Pre-Production – Demonstrate lead product production capabilities, release final design tools

5. Production – Continual improvement of process and parametric performance

We have completed both the alpha and beta phases for our first generation XBAW process technology called XB1. Additionally, we have received and delivered orders for pre-production products based on our XBAW process technology, and in the fourth quarter of fiscal year 2020 we began the production ramp for our first high volume tier one customer, supporting its WiFi 6 CPE product.

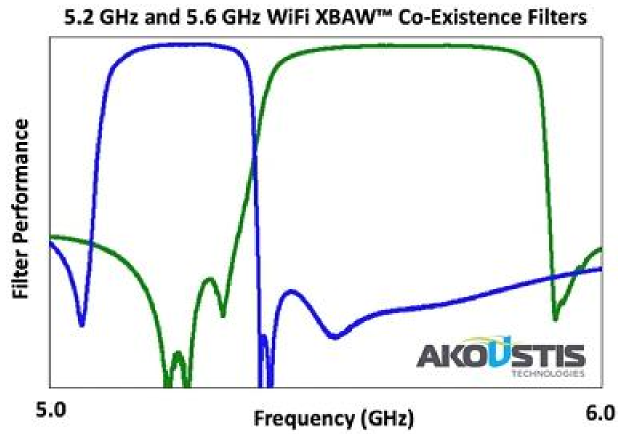
Research and Development

Since inception, the Company's focus has been on developing an innovative wireless filter technology with a compelling value proposition to our potential customers and a significant and noticeable impact to the end user. Unlike today's polycrystalline material (used to manufacture RF resonators and filters), our patented XBAW technology employs high purity piezoelectric films in our resonators, which are used as the enabler to create high performance BAW RF filters. Our high purity piezoelectric materials are a key differentiator when compared to the incumbent amorphous thin-film technologies because they increase the acoustic velocity, the electromechanical coupling coefficient in the resonator and/or high-power performance. These technology features allow Akoustis to engineer RF filter solutions for a broad spectrum for multiple radio frequencies and thus multiple end markets.

Research and development expense totaled $20.5 million for the year ended June 30, 2020 and $19.3 million for the year ended June 30, 2019. R&D activities focused on high purity piezoelectric materials development and resonator demonstration. Current R&D investments include materials advancement, resonator development, RF filter design, high yield wafer manufacturing and filter packaging.

As a result of our efforts, we have developed and introduced several new filters which are currently sampling with multiple customers across multiple markets. Our focus remains on improving the electromechanical coupling and quality factor of our resonator technology and the performance of our fabricated filters through design improvements and process optimization experiments.

We announced our first filter in March 2018, the AKF-1252, a 5.2 GHz filter for the WiFi premise equipment market. The AKF-1252 is a wideband filter for the U-NII-1&2A bands with typical insertion loss of less than 1dB, high rejection and a high-power rating in an ultra- small footprint module. Offering our customers 23-times size reduction over current dielectric resonator technology, our product is the first BAW RF filter targeting the 5.2 GHz WiFi band having achieved pre-production status in November 2018. In addition, we have announced the sister part to the AKF-1252, called the AKF-1256, which allows the Company to bundle the 5.2 GHz and 5.6 GHz filter solutions to the CPE market. The Company received its first pre-production order in May 2019. The tandem 5.2 GHz and 5.6 GHz filter solutions allow coexistence of WiFi signals in the 5GHz spectrum as shown below.



Following the AKF-1252, we also announced the AKF-1652, a 5.2 GHz filter for the WiFi device market, with lower insertion loss in a small footprint, wafer-level package (WLP) that will be required before the expected uptake of 5.2 GHz WiFi in cellular handsets and other devices. We believe that handset makers will be adopting new WiFi bands in the 5-7 GHz bands in the coming years.

We announced our first design win for the sale of our 5.2 GHz and 5.6 GHz coexistence filters on May 4, 2020 with a tier-1 consumer-focused OEM. We expect to begin production for this new design in the September quarter of calendar of the current year.

With the FCC's decision to increase the available spectrum for WiFi with the ratification of 5.9-7.1 GHz., new filters will be needed that can operate at high frequency with ultra-wide bandwidth. This new spectrum is called WiFi 6E. We expect to deliver both standard products and custom filters to address this new market over the next 12 months and beyond. To this end, we announced our first WiFi 6E filter on June 8, 2020, a 5.5 GHz XBAW™ filter solution with 675 MHz of bandwidth. We are currently sampling this filter with multiple OEMs, ODMs and SoC makers.

In April 2018 we announced the AKF-1938 filter in the 3.8 GHz band, adjacent to emerging 5G mobile frequency auctions. In July 2018, we announced that we signed our first customer, a large military OEM with annual revenue of over $1 billion. We received revenue from this product in the second quarter of fiscal 2019, with follow-on new orders received in calendar 2019. This customer asked us to produce five additional S-band filters on July 19, 2019. We delivered these filters in December 2019 and expect to go into production in the second half of calendar 2020. On February 19, 2020, we received a development order from a second defense customer for an unmanned aircraft system filter for drones. On April 29, 2020, we announced shipment of the first samples to the customer and expect to receive a commercial order for this filter by the end of March 2021.

On December 3, 2019, we announced our first 5G network infrastructure order for small cell base station equipment from a tier-1 OEM. On February 3, 2020, we announced our first volume order for a second 5G small cell network infrastructure filter from the same customer. On April 8, 2020, we announced this volume order which led to our first design win in 5G small cell filters from this customer, which is expected to go into production in the September quarter of calendar 2020. We announced a third filter development order on May 8, 2020, for another 5G small cell filter that is expected to go into production in the second half of calendar 2020. As we announced on May 8, 2020, we are now engaged with over five OEMs and ODMs that are sampling our small cell filters.

On January 30, 2020, we announced that we had design-locked our XBAW™ filter for Citizen's Broadband Radio Service (CBRS). This network is expected to begin roll-out in the second half of calendar 2020 once the priority access licenses are auctioned off by the FCC. Originally slated for late June, the auction has been delayed by the Coronavirus epidemic, and the timing of the auction could experience further delay.

We have also announced a 4G LTE infrastructure win for two adjacent filters, with engineering revenue attached and follow on production filter revenue expected upon completion of the design. Moving forward, we expect to deliver new catalog components based on the frequencies in highest demand from our customers and will announce additional products as we continue to benefit from our research and development efforts.

On August 13, 2019, we announced an order to develop two additional 5G mobile filters from a tier-1 telecommunications company. We announced the delivery of the two filters to the customer on December 16, 2019 and received an order for additional samples. On January 7, 2020, we announced our first wafer level package demonstrator for mobile devices which we expect to complete and deliver fully qualified samples by the end of calendar 2020.

Akoustis has added 14 filters to its product catalog including a 5.6 GHz WiFi filter, a 5.2 GHz WiFi filter, a 5.5 GHz WiFi-6E filter, three small cell 5G network infrastructure filters including two Band n77 filters and one Band n79 filter, a 3.8 GHz filter and five S-Band filters for defense phased-array radar applications, a 3.6 GHz filter for the CBRS 5G infrastructure market and a C-Band filter for the unmanned aircraft systems (UAS) market. The Company is also developing several new filters for the sub-7 GHz bands targeting 5G mobile device, network infrastructure, WiFi CPE and defense markets. 12 of the 14 filters were completed in fiscal 2020 as our processes and modeling capabilities continue to improve.

Raw Materials

Within its internal manufacturing operation, Akoustis sources raw materials, process gases, metals and other miscellaneous supplies to fabricate its BAW RF filter circuits. Materials range from substrates (used to deposit key piezoelectric materials) to standard dielectric-based laminates (used for packaging of the RF filter circuits). The Company sources at least two types of substrate materials for its BAW process and we have more than one supplier for one material and a single source for the other. Multiple process gases are used for material synthesis, process etching and wafer treatment. While there is more than one supplier for most process gases, the purity levels of such gases may change by source. Hence, either purification or process requalification may be required when purchasing from a second source is required. Akoustis sources various high purity metals for electrode formation and interconnect layers for its RF circuits. Such metals are available in various purity levels and are available from more than one supplier. Other process handling hardware common to the semiconductor industry is available in abundance from multiple suppliers. Consistent with other semiconductor manufacturers, the Company may have to work with all its suppliers to ensure adequate supply of raw materials, process gases and metals as the Company ramps from R&D into high volume manufacturing.

Intellectual Property

We rely on a combination of intellectual property rights, including patents and trade secrets, along with copyrights, trademarks and contractual obligations and restrictions to protect our core technology and business.

In the United States and internationally, as of August 17, 2020, our IP portfolio included 33 patents, including one blocking patent that we have licensed from Cornell University. Additionally, we have 71 active and pending patent applications. These patents cover our XBAW TM RF filter technology from the substrate level through the system application layer. Where possible, we leverage both federal and state level R&D grants to support development and commercialization of our technology. Our owned patents expire between 2034 and 2038. We intend to continue to innovate and expand our patent portfolio, and when appropriate, we will look to purchase license(s) that grant access to additional intellectual property that enables, enhances or further expands our technical capabilities and/or product.

We believe that Akoustis will have competitive advantages from rights granted under our patent applications. Some applications, however, may not result in the issuance of any patents. In addition, any future patent may be opposed, contested, circumvented or designed around by a third party or found to be unenforceable or invalidated. Others may develop technologies that are similar or superior to our proprietary technologies, duplicate our proprietary technologies or design around patents owned or licensed by us.

We generally control access to, and use of, our confidential information through the use of internal and external controls, including contractual protections with employees, contractors and customers. We rely in part on the United States and international copyright laws to protect our intellectual property. All employees and consultants are required to execute confidentiality and intellectual property assignment agreements in connection with their employment and consulting relationships with us. We also require them to agree to disclose and assign to us all inventions conceived or made in connection with the employment or consulting relationship.

Competition

The RF filter market is controlled by a relatively small number of RF component suppliers. These companies include, among others, Broadcom Corporation, Murata Manufacturing Co., Ltd., Qorvo, Inc., Skyworks Solutions Inc., Taiyo Yuden Co. Ltd., and Qualcomm Incorporated. Broadcom Corporation and Qorvo, Inc. dominate the high band BAW filter market, controlling a significant portion of the customer base and are increasing capacity to meet the growing RF filter demand of the 4G/LTE market.

Upon completion of our product development, we will compete directly with these companies to secure design slots inside RFFE module targeting companies that procure filters or internally source filters. While many of our competitors have more resources than we have, we believe that our filter designs will be superior in performance, and we will approach prospective customers as a pure-play filter supplier, offering advantages in performance over the full frequency range at competitive costs. Our challenges will include convincing our customers that we have a strong intellectual property position, that we will be able to deliver in volume, that we will meet their price targets, and that we can satisfy quality, reliability and other requirements. For a list of other competitive factors, see “Item 1A. Risk Factors - We are still developing many of our products, and they may not be accepted in the market.”

Employees

We place an emphasis on hiring the best talent at the right time to enable our core technology and business growth. This includes establishing a competitive compensation and benefits package, thereby enhancing our ability to recruit experienced personnel and key technologists. As of June 30, 2020, we had a total of 95 full-time employees plus 7 part-time and temporary employees. We will continue to hire specific and targeted positions to further enable our technology and manufacturing capabilities as and when appropriate.

Government Regulations

Our business and products in development are subject to regulation by various federal and state governmental agencies, including the radio frequency emission regulatory activities of the Federal Communications Commission (the “FCC”), the consumer protection laws of the Federal Trade Commission (the “FTC”), the import/export regulatory activities of the Department of Commerce, the product safety regulatory activities of the Consumer Products Safety Commission, and the environmental regulatory activities of the Environmental Protection Agency (the “EPA”).

The rules and regulations of the FCC limit the RF used by, and level of power emitting from, electronic equipment. Our RF filters, as a key element enabling consumer electronic smartphone equipment, are required to comply with these FCC rules and may require certification, verification or registration of our RF filters with the FCC. Certification and verification of new equipment requires testing to ensure the equipment’s compliance with the FCC’s rules. The equipment must be labeled according to the FCC’s rules to show compliance with these rules. Testing, processing of the FCC’s equipment certificate or FCC registration and labeling may increase development and production costs and could delay the implementation of our XBAW acoustic wave resonator technology for our RF filters and the launch and commercial productions of our filters into the U.S. market. Electronic equipment permitted or authorized to be used by us through FCC certification or verification procedures must not cause harmful interference to licensed FCC users, and may be subject to RF interference from licensed FCC users. Selling, leasing or importing non-compliant equipment is considered a violation of FCC rules and federal law, and violators may be subject to an enforcement action by the FCC. Any failure to comply with the applicable rules and regulations of the FCC could have an adverse effect on our business, operating results and financial condition by increasing our compliance costs and/or limiting our sales in the United States.

The semiconductor and electronics industries also have been subject to increasing environmental regulations. A number of domestic and foreign jurisdictions seek to restrict the use of various substances, a number of which have been used in our products in development or processes. While we have implemented a compliance program to ensure our product offering meets these regulations, there may be instances where alternative substances will not be available or commercially feasible, or may only be available from a single source, or may be significantly more expensive than their restricted counterparts. Additionally, if we were found to be non-compliant with any such rule or regulation, we could be subject to fines, penalties and/or restrictions imposed by government agencies that could adversely affect our operating results. We will continue to monitor our quality program and expand as required to maintain compliance and ability to audit our supply chain.

Noncompliance with applicable regulations or requirements could subject us to investigations, sanctions, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties, or injunctions. An adverse outcome in any such litigation could require us to pay contractual damages, compensatory damages, punitive damages, attorneys' fees and costs. These enforcement actions could harm our business, financial condition and results of operations. If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, financial condition and results of operations could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management's attention and resources and an increase in professional fees.

ITEM 1A. RISK FACTORS

This section is a summary of the risks that we presently believe are material to the operations of the Company. Additional risks of which we are not presently aware or which we presently deem immaterial may also impair the Company's business, financial condition or results of operations.

Risks Related to our Business and the Industry in which we Operate

We have a limited operating history upon which investors can evaluate our business and future prospects.

We are an emerging commercial company that recently began commercial operations selling advanced single-crystal BAW filter products for RFFEs for use in the mobile wireless device industry. Historically, we have primarily focused on R&D of high efficiency acoustic wave resonator technology utilizing single-crystal piezoelectric materials, and have earned minimal revenue from operations since inception.

Since our expectations of potential customers and future demand for our products are based on only limited experience, it is difficult for our management and our investors to accurately forecast and evaluate our future prospects and our revenues. Our proposed progression of our operations are therefore subject to all of the risks inherent in light of the expenses, difficulties, complications and delays frequently encountered in connection with the growth of any new business and the development of a product, as well as those risks that are specific to our business in particular. The risks include, but are not limited to, our reliance on third parties to complete some processes for the manufacturing and packaging of our products, the possibility that we will not be able to develop functional and scalable products, or that although functional and scalable, our products and/or services will not be accepted in the market. To successfully introduce and market our products at a profit, we must establish brand name recognition and competitive advantages for our products. There are no assurances that the Company can successfully address these challenges. If it is unsuccessful, the Company and its business, financial condition and operating results will be materially and adversely affected.

We may not generate sufficient revenues to achieve profitability.

We have incurred operating losses since our inception and expect to continue to have negative cash flow from operations. We have only generated minimal revenues from shipment of product while our primary sources of funds have been R&D grants, MEMS foundry services, issuances of our equity, and debt. We have experienced net losses of approximately $103.6 million for the period from May 12, 2014 (inception) to June 30, 2020. Our future profitability will depend on our ability to create a sustainable business model and generate sufficient revenues, which is subject to a number of factors, including our ability to successfully implement our strategies and execute our R&D plan, our ability to implement our improved design and cost reductions into manufacturing of our RF filters, the availability of funding, market acceptance of our products, consumer demand for end products incorporating our products, our ability to compete effectively in a crowded field, our ability to respond effectively to technological advances by timely introducing our new technologies and products, and global economic and political conditions.

Our future profitability also depends on our expense levels, which are influenced by a number of factors, including the resources we devote to developing and supporting our projects and potential products, the continued progress of our research and development of potential products, our ability to improve R&D efficiencies, license fees or royalties we may be required to pay, and the potential need to acquire licenses to new technology, the availability of intellectual property for licensing or acquisition, or the use of our technology in new markets, which could require us to pay unanticipated license fees and royalties in connection with these licenses.

Our development and commercialization efforts may prove more expensive than we currently anticipate, and we may not succeed in increasing our revenues to offset higher expenses. These expenses, among other things, may cause our net income and working capital to decrease. If we fail to generate sufficient revenue and manage our expenses, we may never achieve profitability, which would adversely and materially affect our ability to provide a return to our investors.

We are dependent on the proper functioning of our critical facilities, our supply chain and distribution networks and the financial stability of our customers, all of which have been negatively impacted by the COVID-19 pandemic in a manner that may have a materially adverse effect on our business, financial condition or results of operations.

Our ability to manufacture products may be materially adversely impacted by COVID-19.

The COVID-19 pandemic is impacting worldwide economic activity, which has had a corresponding effect on our sales activity. The virus continues to spread globally, has been declared a pandemic by the World Health Organization and has spread to over 100 countries, including the United States. The impact of this pandemic has been and will likely continue to be extensive in many aspects of society, and has resulted in and will likely continue to result in significant disruptions to the global economy, as well as businesses and capital markets around the world. With the ongoing effect of the COVID-19 pandemic in the United States and other countries, it is unclear how economic activity and workflows will continue to be impacted and for how long. Many employers in the United States are requiring their employees to work from home or not come into their offices or facilities. We manufacture primarily out of one facility in Canandaigua, New York. In order to mitigate the risk posed by COVID-19, we have implemented social distancing measures, daily self-health attestations, and mandatory mask policies, including when warranted by state and local guidelines, the implementation of new staffing plans in our facilities whereby certain employees work remotely and the remaining on-site force is divided into multiple shifts or segregated in different parts of the facility. Our actions continue to evolve in response to new government measures and scientific knowledge regarding COVID-19. To date, these protocols have not resulted in a decrease in the production capabilities of our facility. However, if the manufacturing capabilities of this facility are adversely impacted as a result of COVID-19, whether by a decrease in productivity caused by precautionary measures or by one or more employees becoming ill, it may not be possible for us to timely manufacture relevant products at required levels or at all. A reduction or interruption in any of our manufacturing processes could have a material adverse effect on our business, results of operations, financial condition and cash flows.

We also might be unable to obtain certain supplies, product components, or equipment from our suppliers and vendors due to constraints created by COVID-19. For instance, we have observed delays in certain suppliers' deliveries of materials necessary for us to manufacture our products and in certain vendors' ability to manufacture equipment used in our production process. Additionally, travel restrictions and stay-at-home orders or similar mandates of foreign and domestic governments have prevented us from visiting suppliers' facilities as part of our quality control processes and have constrained or delayed visits by out-of-state employees and suppliers to perform installations, maintenance and service. These impacts may delay our launch of new products, adversely affect our ability to deliver customers' orders timely or in the requested quantities and inhibit our ability to ensure the quality of supplies used in our products.

Our sales may be materially adversely impacted by COVID-19.

Our sales efforts typically function by in-person meetings with customers and potential customers to discuss our products. The method and timing of these meetings has been altered due to stay-at-home orders and travel restrictions relating to COVID-19. This limitation on the ability of our sales personnel to maintain their customary interaction with customers may negatively affect demand for our products. We have also found that potential customers have been forced to slow and reprioritize various product development projects as a result of COVID-19. This disruption to our sales activity and our customers' businesses, and the resulting delay in the growth of our business, may have a material adverse effect on our results of operations, financial condition and cash flows. Furthermore, a reduction or delay in revenues will prolong our dependence on capital raising to finance our operations.

We previously identified material weaknesses in our internal control over financial reporting that resulted in concluding that our disclosure controls and procedures were not effective as of June 30, 2019. As of June 30, 2020, we had remediated these material weaknesses and have concluded that our disclosure controls and procedures are effective. However, if we fail to maintain effective internal control over financial reporting in the future, material misstatements in our financial statements could occur, harm our reputation or cause investors to lose confidence in the reported financial information, all or any of which could have a material adverse effect on our results of operations and financial condition, which, in turn, could adversely affect the market price of our Common Stock, our access to debt or other capital markets or other aspects of our business, prospects, results of operations or financial condition. Additionally, as we are no longer an "accelerated filer" under SEC rules, we are not required to provide an auditor's attestation of our assessment of internal control over financial reporting.

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal control. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of a company's annual or interim financial statements will not be prevented or detected on a timely basis. Section 404 of the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley") requires that we evaluate and determine the effectiveness of our internal control over financial reporting and provide a management report on internal control over financial reporting.

In our Annual Report on Form 10-K for the year ended June 30, 2019, we identified certain material weaknesses in our internal control over financial reporting as disclosed in Item 9A. As of June 30, 2020, management determined that those material weaknesses had been remediated and that our disclosure controls and procedures are effective. As we are no longer an "accelerated filer" under SEC rules, we are not required to provide an auditor's attestation of management's assessment of internal control over financial reporting as of June 30, 2020, although our auditor did provide such an attestation as of June 30, 2019.

If we fail to maintain proper and effective internal controls, we may not detect errors on a timely basis and our financial statements may be materially misstated. Additionally, if we are unable to assert that our internal control over financial reporting is effective, we may not be able to access debt markets, equity investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our Common Stock could be adversely affected, and we could become subject to investigations by Nasdaq, the SEC or other regulatory authorities, which could require additional financial and management resources.

The industry and the markets in which the Company operates are highly competitive and subject to rapid technological change. Therefore, in order for our RF filters to be competitive and achieve market acceptance, we need to keep pace with rapid development of new process technologies.

The markets in which we compete are intensely competitive. We operate primarily in the industry that designs and produces semiconductor components for wireless communications and other wireless devices, which is subject to rapid changes in both product and process technologies based on demand and evolving industry standards. The markets for our products are characterized by:

- rapid technological developments and product evolution,
- rapid changes in customer requirements,
- frequent new product introductions and enhancements,
- continuous demand for higher levels of integration, decreased size and decreased power consumption,
- short product life cycles with declining prices over the life cycle of the product, and
- evolving industry standards.

The continuous evolutions of these technologies and frequent introduction of new products and enhancements have generally resulted in short product life cycles for wireless semiconductor products, in general, and for RFFEs, in particular. Our R&D activity and resulting products could become obsolete or less competitive sooner than anticipated because of a faster than anticipated change in one or more of the above-noted factors. Therefore, in order for our RF filters to be competitive and achieve market acceptance, we need to keep pace with rapid development of new process technologies, which requires us to:

- respond effectively to technological advances by timely introducing new technologies and products,
- successfully implement our strategies and execute our R&D plan in practice,
- improve the efficiency of our technology, and
- implement our improved design and cost reductions into manufacturing of our RF filters.

We are still developing many of our products, and they may not be accepted in the market.

Although we believe that our XBAW acoustic wave resonator technology, which utilizes high purity piezoelectric materials, provides material advantages over existing RF filters, and we have developed and are currently developing various methods of integration suitable for implementation of this technology into RF filters, we cannot be certain that our RF filters will be able to achieve or maintain market acceptance. While we have fabricated R&D filters that demonstrate the performance of our XBAW technology, and this technology has been qualified for mass production, the Company is undergoing a critical production ramp to commercial scale. There are no assurances that we can successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields. In addition to our limited operating history, we will depend on a limited number of manufacturers and customers for a significant portion of our revenue in the future and we cannot guarantee their acceptance of our products. Each of these factors may adversely affect our ability to implement our business strategy and achieve our business goals.

The successful development of our XBAW technology and market acceptance of our RF filters will be highly complex and will depend on the following principal competitive factors, including our ability to:

- comply with industry standards and effectively compete against current technology for producing RF acoustic wave filters,
- differentiate our products from offerings of our competitors by delivering RF filters that are higher in quality, reliability and technical performance,
- anticipate customer and market requirements, changes in technology and industry standards and timely develop improved technologies that meet high levels of satisfaction of our potential customers,
- maintain, grow and manage our internal teams to the extent we increase our operations and develop new segments of our business,
- develop and maintain successful collaborative, strategic, and other relationships with manufacturers, customers and contractors,
- protect, develop or otherwise obtain adequate intellectual property for our technology and our filters; and
- obtain strong financial, sales, marketing, technical and other resources necessary to develop, test, manufacture, commercialize and market our filters.

If we are unsuccessful in accomplishing these objectives, we may not be able to compete successfully against current and potential competitors. As a result, our XBAW technology and our RF filters may not be accepted in the market and we may never attain profitability.

We face risks associated with the operation of our manufacturing facility.

We operate a wafer fabrication facility in Canandaigua, NY that we acquired in June 2017. We currently use several international and domestic suppliers to assemble and test our products, as well as our own test and tape and reel facilities located in the U.S.

A number of factors related to our facilities will affect our business and financial results, including the following:

- our ability to adjust production capacity in a timely fashion in response to changes in demand for our products;
- the significant fixed costs of operating the facilities;
- factory utilization rates;
- our ability to qualify our facilities for new products and new technologies in a timely manner;
- the availability of raw materials, the impact of the volatility of commodity pricing and tariffs imposed on raw materials, including substrates, gold, platinum and high purity source materials such as gallium, aluminum, arsenic, indium, silicon, phosphorous and palladium;

- our manufacturing cycle times;
- our manufacturing yields;
- our ability to hire, train and manage qualified production personnel;
- our compliance with applicable environmental and other laws and regulations; and
- our ability to avoid prolonged periods of down-time in our facilities for any reason.

If we experience poor manufacturing yields, our operating results may suffer.

Our products have unique designs and are fabricated using multiple semiconductor process technologies that are highly complex. In many cases, our products are assembled in customized packages. Many of our products consist of multiple components in a single module and feature enhanced levels of integration and complexity. Our customers insist that our products be designed to meet their exact specifications for quality, performance and reliability. Our manufacturing yield is a combination of yields across the entire supply chain, including wafer fabrication, assembly and test yields. Defects in a single component in an assembled module product can impact the yield for the entire module, which means the adverse economic impacts of an individual defect can be multiplied many times over if we fail to discover the defect before the module is assembled. Due to the complexity of our products, we periodically experience difficulties in achieving acceptable yields and other quality issues, particularly with respect to new products.

Our customers test our products once they have been assembled into their products. The number of usable products that result from our production process can fluctuate as a result of many factors, including:

- design errors;
- minute impurities and variations in materials used;
- contamination of the manufacturing environment;
- equipment failure or variations in the manufacturing processes;
- losses from broken wafers or other human error; and
- defects in substrates and packaging.

We constantly seek to improve our manufacturing yields. Typically, for a given level of sales, when our yields improve, our gross margins improve, and when our yields decrease, our unit costs are higher, our margins are lower, and our operating results are adversely affected.

Costs of product defects and deviations from required specifications could include the following:

- writing off inventory;
- scrapping products that cannot be fixed;
- accepting returns of products that have been shipped;
- providing product replacements at no charge;
- reimbursement of direct and indirect costs incurred by our customers in recalling or reworking their products due to defects in our products;
- travel and personnel costs to investigate potential product quality issues and to identify or confirm the failure mechanism or root cause of product defects; and
- defending against litigation.

These costs could be significant and could reduce our gross margins. Our reputation with customers also could be damaged as a result of product defects and quality issues, and product demand could be reduced, which could harm our business and financial results.

Problems in scaling our manufacturing operations could have a material adverse effect on our business.

Future customer demand may require us to significantly increase our manufacturing capacity. There are substantial technical challenges to increasing manufacturing capacity, including equipment acquisition lead times, materials procurement, scaling our manufacturing process, manufacturing site expansion, and the need to significantly increase production yields while maintaining or improving quality control and assurance. Developing commercial-scale manufacturing facilities will require the investment of substantial additional funds and the hiring and retention of additional management, quality assurance, quality control and technical personnel who have the necessary manufacturing experience. The scaling of manufacturing capacity is subject to numerous risks and uncertainties and may lead to variability in product quality or reliability, prolonged construction timelines, as well as resources required to acquire, install and maintain manufacturing equipment, among others, all of which can lead to unexpected delays in manufacturing output. Additionally, the production of our products must occur in a highly controlled and clean environment to minimize particles and other yield- and quality-limiting contaminants. Weaknesses in process control or minute impurities in materials may cause a substantial percentage of defective products. We may not be able to maintain stringent quality controls and contamination problems could arise. Material defects in our products could result in loss or delay of revenues, delayed market acceptance, damage to our reputation, lost customers, legal claims, increased insurance costs or increased service and warranty costs. If we are unable to successfully scale up our manufacturing operations to meet customer demand, our business growth could be materially adversely affected.

Industry overcapacity could cause us to underutilize our manufacturing facilities and have a material adverse effect on our financial performance.

It is difficult to predict future demand for our products, which makes it difficult to estimate future requirements for production capacity and avoid periods of overcapacity. Fluctuations in the growth rate of industry capacity relative to the growth rate in demand for our products also can lead to overcapacity and contribute to cyclicality in the semiconductor market.

Capacity expansion projects have long lead times and require capital commitments based on forecasted product trends and demand well in advance of production orders from customers. In recent years, we have made significant capital investments to expand our RF filter capacity to address forecasted future demand patterns. In certain cases, these capacity additions may exceed the near-term demand requirements, leading to overcapacity situations and underutilization of our manufacturing facilities.

As many of our manufacturing costs are fixed, these costs cannot be reduced in proportion to the reduced revenues experienced during periods of underutilization. Underutilization of our manufacturing facilities can adversely affect our gross margin and other operating results. If demand for our products experiences a prolonged decrease, we may be required to close or idle facilities and write down our long-lived assets or shorten the useful lives of underutilized assets and accelerate depreciation, which would increase our expenses.

We face intense competition, which may cause pricing pressures, decreased gross margins and loss of potential market share and may materially and adversely affect our business, financial condition and results of operations.

We compete with U.S. and international semiconductor manufacturers and mobile semiconductor companies of all sizes in terms of resources and market share, some of whom have significantly greater financial, technical, manufacturing and marketing resources than we do. We expect competition in our markets to intensify as new competitors enter the RF component market, existing competitors merge or form alliances, and new technologies emerge. Our competitors may introduce new solutions and technologies that are superior to our BAW technology, are verified on a commercial scale, and have achieved widespread market acceptance. Certain of our competitors may be able to adapt more quickly than we can to new or emerging technologies and changes in customer requirements or may be able to devote greater resources to the development, promotion and sale of their products than we can. This implementation may require us to modify the manufacturing process for our filters, design new products to more stringent standards, and redesign some existing products, which may prove difficult for us and result in delays in product deliveries and increased expenses.

Increased competition could also result in pricing pressures, declining average selling prices for our RF filters, decreased gross margins and loss of potential market share. We will need to make substantial investments to develop these enhancements and technologies, and we cannot assure investors that we will have funds available for these investments or that these enhancements and technologies will be successful. If a competing technology emerges that is, or is perceived to be, superior to our existing technology and we are unable to adapt to these changes and to compete effectively, our market share and financial condition could be materially and adversely affected, and our business, revenue, and results of operations could be harmed.

We contract with a number of large service providers and product companies that have considerable bargaining power, which may require us to agree to terms and conditions that could have an adverse effect on our business or ability to recognize revenues.

Large service providers and product companies comprise a significant portion of our current and target customer bases. These customers generally have greater purchasing power than smaller entities and, accordingly, often request and receive more favorable terms from suppliers, including us. As we seek to expand our sales to existing customers and acquire new customers, we may be required to agree to terms and conditions that are favorable to our customers and that may affect the timing of our ability to recognize revenue, increase our costs and have an adverse effect on our business, financial condition, and results of operations. Furthermore, large customers have increased buying power and ability to require onerous terms in our contracts with them, including pricing, warranties, and indemnification terms. If we are unable to satisfy the terms of these contracts, it could result in liabilities of a material nature, including litigation, damages, additional costs, loss of market share and loss of reputation. Additionally, the terms these large customers may require, such as most-favored customer or exclusivity provisions with respect to specific products, may impact our ability to do business with other customers and generate revenues from such customers.

We may be subject to risks related to doing business in, and having counterparties based in, foreign countries.

We engage in operations, and enter into agreements with counterparties, located outside the U.S., which exposes us to political, governmental and economic instability and foreign currency exchange rate fluctuations.

Any disruption caused by these factors could harm our business, results of operations, financial condition, liquidity and prospects. Risks associated with potential operations, commitments and investments outside of the U.S. include but are not limited to risks of:

- global and local economic, social and political conditions and uncertainty;
- currency exchange restrictions and currency fluctuations;
- war or terrorist attack;
- local outbreak of disease, such as COVID-19;
- renegotiation or nullification of existing contracts or international trade arrangements;
- labor market conditions and workers' rights affecting our manufacturing operations or those of our customers;
- macro-economic conditions impacting key markets and sources of supply;
- changing laws and policies affecting trade, taxation, financial regulation, immigration, and investment;
- compliance with laws and regulations that differ among jurisdictions, including those covering taxes, intellectual property ownership and infringement, imports and exports, anti-corruption and anti-bribery, antitrust and competition, data privacy, and environment, health, and safety; and
- general hazards associated with the assertion of sovereignty over areas in which operations are conducted, transactions occur, or counterparties are located.

As our reporting currency is the U.S. dollar, any operations conducted outside the U.S. or transactions denominated in foreign currencies would face additional risks of fluctuating currency values and exchange rates, hard currency shortages and controls on currency exchange. In addition, we would be subject to the impact of foreign currency fluctuations and exchange rate changes on our financial reports when translating our assets, liabilities, revenues and expenses from operations or transactions outside of the U.S. into U.S. dollars at the then-applicable exchange rates. These translations could result in changes to our results of operations from period to period.

Economic regulation in China could adversely impact our business and results of operations.

A significant portion of our potential customer base is in China. For many years, the Chinese economy has experienced periods of rapid growth and wide fluctuations in the rate of inflation. In response to these factors, the Chinese government has, from time to time, adopted measures to regulate growth and to contain inflation, including currency controls and measures designed to restrict credit, control prices or set currency exchange rates. Such actions in the future, as well as other changes in Chinese laws and regulations, including actions in furtherance of China's stated policy of reducing its dependence on foreign semiconductor manufacturers, could increase the cost of doing business in China, foster the emergence of Chinese-based competitors, decrease the demand for our products in China, or reduce the supply of critical materials for our products, which could have a material adverse effect on our business and results of operations.

Changes in government trade policies, including the imposition of tariffs, export restrictions, sanctions, or other retaliatory measures could limit our ability to sell our products to certain customers, which may materially adversely affect our sales and results of operations.

The U.S. or foreign governments may take administrative, legislative or regulatory action that could materially interfere with our ability to sell products in certain countries, particularly in China. For example, beginning in May 2018, the U.S. has imposed tariffs, ranging from 7.5% to 25% on approximately two-thirds of U.S. imports from China, including certain electronic components and equipment. China has taken retaliatory actions, including imposing tariffs on certain U.S. exports effective September 1, 2019. While the imposition of these tariffs did not have a direct, material adverse impact on our business during fiscal year ended June 30, 2020, the direct and indirect effects of tariffs and other restrictive trade policies are difficult to measure and are only one part of a larger U.S./China economic and trade policy disagreement.

For example, U.S. government actions targeting exports of certain technologies to and from China are becoming more pervasive. In 2018, the U.S. adopted new laws designed to address concerns about the export of emerging and foundational technologies to China. In addition, in May 2019, President Trump issued an executive order that invoked national emergency economic powers to implement a framework to regulate the acquisition or transfer of information communications technology in transactions that imposed undue national security risks. In May 2020, President Trump issued a similar executive order regarding potential foreign threats to the US bulk-power system from foreign adversaries. Also in May 2020, the U.S. Department of Commerce took actions to restrict Chinese entities' access to U.S. technologies. In response to these and other U.S. actions, China could determine to take countermeasures against U.S. companies doing business in or with China. These series of actions and other types of countermeasures could lead to additional restrictions on the export of products that include or enable certain technologies, including products we could potentially provide to China-based customers.

Furthermore, the imposition of tariffs on our potential customers' products that are imported from China to the U.S. could harm sales of such products, which could indirectly harm our business. We cannot predict what actions may ultimately be taken with respect to tariffs, export controls, countermeasures, or other trade measures between the U.S. and China or other countries, what products may be subject to such actions, or what actions may be taken by the other countries in retaliation.

The loss or temporary loss of potential foreign customers or the imposition of restrictions on our ability to sell products to such customers as a result of tariffs, export restrictions, sanctions or other U.S. executive or regulatory actions could materially adversely affect our sales, business and results of operations.

Changes in general economic conditions, together with other factors, cause significant upturns and downturns in the industry, and our business, therefore, may also experience cyclical fluctuations in the future.

From time to time, changes in general economic conditions, together with other factors, may cause significant upturns and downturns in the semiconductor industry. These fluctuations are due to a number of factors, many of which are beyond our control, including:

- levels of inventory in our end markets,
- availability and cost of supply for manufacturing of our RF filters using our design,
- changes in end-user demand for the products manufactured with our technology and sold by our prospective customers,
- exposure to foreign currency exchange rates, import duties and tariffs,
- industry production capacity levels and fluctuations in industry manufacturing yields,
- market acceptance of our current and future customers' products that incorporate our RF filters,
- the gain or loss of significant customers,
- the effects of competitive pricing pressures, including decreases in average selling prices of our RF filters,
- new product and technology introductions by competitors,
- changes in the mix of products produced and sold, and
- intellectual property disputes.

As a result, the demand for our products can change quickly and in ways we may not anticipate, and our business, therefore, may also experience cyclical fluctuations in future operating results. In addition, future downturns in the electronic systems industry could adversely impact our revenue and harm our business, financial condition and results of operations.

Security breaches and other disruptions could compromise our proprietary information and expose us to liability, which would cause our business and reputation to suffer.

We rely on trade secrets, technical know-how and other unpatented proprietary information relating to our product development and manufacturing activities to provide us with competitive advantages. We protect this information by entering into confidentiality agreements with our employees, consultants, strategic partners and other third parties. We also design our computer networks and implement various procedures to restrict unauthorized access to dissemination of our proprietary information.

We face internal and external data security threats. Current, departing or former employees or third parties could attempt to improperly use or access our computer systems and networks to copy, obtain or misappropriate our proprietary information or otherwise interrupt our business. Like other businesses, we are also subject to significant system or network disruptions from numerous causes, including computer viruses and other cyber-attacks, facility access issues, new system implementations and energy blackouts.

Security breaches, computer malware, phishing, spoofing, and other cyber-attacks have become more prevalent and sophisticated in recent years. While we defend against these threats on a daily basis, we do not believe that such attacks to date have caused us any material damage. Because the techniques used by computer hackers and others to access or sabotage networks constantly evolve and generally are not recognized until launched against a target, we may be unable to anticipate, counter or ameliorate all of these techniques. As a result, our and our customers' proprietary information may be misappropriated, and the impact of any future incident cannot be predicted. Any loss of such information could harm our competitive position, result in a loss of customer confidence in the adequacy of our threat mitigation and detection processes and procedures, cause us to incur significant costs to remedy the damages caused by the incident, and divert management and other resources. We routinely implement improvements to our network security safeguards and we are devoting increasing resources to the security of our information technology systems. We cannot, however, assure that such system improvements will be sufficient to prevent or limit the damage from any future cyber-attack or network disruption.

The costs related to cyber-attacks or other security threats or computer systems disruptions typically would not be fully insured or indemnified by others. Occurrence of any of the events described above could result in loss of competitive advantages derived from our R&D efforts or our intellectual property. Moreover, these events may result in the early obsolescence of our products, product development delays, or diversion of the attention of management and key information technology and other resources, or otherwise adversely affect our internal operations and reputation or degrade our financial results and stock price.

We may be subject to theft, loss, or misuse of personal data by or about our employees, customers or other third parties, which could increase our expenses, damage our reputation, or result in legal or regulatory proceedings.

In the ordinary course of our business, we have access to sensitive, confidential or personal data or information regarding our employees and others that is subject to privacy and security laws and regulations. The theft, loss, or misuse of personal data collected, used, stored, or transferred by us to run our business, or by our third party service providers, including business process software applications providers and other vendors that have access to sensitive data, could result in damage to our reputation, disruption of our business activities, significantly increased business and security costs or costs related to defending legal claims.

Global privacy legislation, enforcement, and policy activity in this area are rapidly expanding and creating a complex regulatory compliance environment. For example, the European Union has adopted the General Data Protection Regulation ("GDPR"), which requires companies to comply with rules regarding the handling of personal data, including its use, protection and the ability of persons whose data is stored to correct or delete such data about themselves. Failure to meet GDPR requirements could result in penalties of up to the higher of €20 million or 4% of worldwide revenue. In addition, the interpretation and application of consumer and data protection laws in the U.S., Europe and elsewhere are often uncertain and fluid, and may be interpreted and applied in a manner that is inconsistent with our data practices. Complying with these changing laws has caused, and could continue to cause, us to incur substantial costs, which could have an adverse effect on our business and results of operations. Further, failure to comply with existing or new rules may result in significant penalties or orders to stop the alleged non-compliant activity. Finally, even our inadvertent failure to comply with federal, state, or international privacy-related or data protection laws and regulations could result in audits, regulatory inquiries or proceedings against us by governmental entities or others.

Our business and operations would suffer in the event of system failures, and our operations are vulnerable to interruption by natural disasters, terrorist activity, power loss and other events beyond our control, the occurrence of which could materially harm our business.

Despite the implementation of security measures, our internal computer systems and those of our contractors and consultants are vulnerable to damage from computer viruses, unauthorized access as well as telecommunication and electrical failures. While we have not experienced any such system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our R&D. If any disruption or security breach resulted in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and/or the further development of our technology for RF filters could be delayed.

We are also vulnerable to accidents, electrical blackouts, fires, labor strikes, terrorist activities, war, natural disasters, including hurricanes, earthquakes, floods and tornadoes, and other events beyond our control, and we have not undertaken a systematic analysis of the potential consequences to our business as a result of any such events and do not have an applicable recovery plan in place. We carry business interruption insurance that would compensate us for certain actual losses from interruptions of our business that may occur, however that may not fully cover all losses incurred, any losses or damages incurred could cause our business to materially suffer.

If we are unable to attract and retain qualified personnel to contribute to the development, manufacture and sale of our products, we may not be able to effectively operate our business.

As the source of our technological and product innovations, our key technical personnel represent a significant asset. We believe that our future success is highly dependent on the continued services of our current key officers, employees, and Board members, as well as our ability to attract and retain highly skilled and experienced technical personnel. The loss of their services could have a detrimental effect on our operations. Specifically, the loss of the services of our President and Chief Executive Officer, our Interim Chief Financial Officer, our Executive Vice President of Business Development, our Chief Product Officer, any major changes in our Board or other senior management, or our inability to attract, retain and motivate qualified personnel could have a material adverse effect on our ability to operate our business. The competition for management and technical personnel is intense in the wireless semiconductor industry, and therefore, we cannot assure you that we will be able to attract and retain qualified management and other personnel necessary for the design, development, manufacture and sale of our products.

Litigation or legal proceedings, including product liability claims, could expose us to significant liabilities, occupy a significant amount of our management's time and attention and damage our reputation.

We are from time to time party to various litigation claims and legal proceedings. We evaluate these claims and proceedings to assess the likelihood of unfavorable outcomes and estimate, if possible, the amount of potential losses. If we or any of our manufacturers fails to successfully manufacture wafers that conform to our design specifications and the strict regulatory requirements of the FCC, it may result in substantial risk of undetected flaws in components or other materials used by our manufacturers during fabrication of our filters and could lead to product defects and costs to repair or replace these parts or materials, significantly impacting our ability to develop and implement our technology and to improve performance of our RF filters. In addition, claims made or threatened by our suppliers, customers or current or former employees could adversely affect our relationships, damage our reputation or otherwise adversely affect our business, financial condition or results of operations. The costs associated with defending product liability and other claims, and the payment of damages, could be substantial. Our reputation could also be adversely affected by such claims, whether or not successful.

We may establish reserves as appropriate based upon assessments and estimates in accordance with our accounting policies in accordance with U.S. GAAP. We base our assessments, estimates and disclosures on the information available to us at the time and rely on legal and management judgment. Actual outcomes or losses may differ materially from assessments and estimates. Actual settlements, judgments or resolutions of these claims or proceedings may negatively affect our business and financial performance. A successful claim against us that is not covered by insurance or is in excess of our available insurance limits could require us to make significant payments of damages and could materially adversely affect our financial condition, results of operations and cash flows.

If we are unable to establish effective marketing and sales capabilities or enter into additional agreements with third parties to market and sell our RF filters, we may not be able to effectively generate and sustain or increase product revenues.

We have limited experience selling, marketing or distributing products and currently have a small internal marketing and sales force. To progress the launch and commercialization of our technology and our RF filters, we must build on a territory-by-territory basis marketing, sales, distribution, managerial and other non-technical capabilities or make arrangements with third parties to perform these services, and we may not be successful in doing so. Therefore, we may choose to collaborate, either globally or on a territory-by-territory basis, with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. If so, our success will depend, in part, on our ability to enter into and maintain collaborative relationships for such capabilities, such collaborator's strategic interest in the products under development and such collaborator's ability to successfully market and sell any such products.

If we are unable to enter into such arrangements when needed on acceptable terms or at all, we may not be able to successfully commercialize our filters. Further, to the extent that we depend on third parties for marketing and distribution, any revenues we receive will depend upon the efforts of such third parties, and there can be no assurance that such efforts will be successful. If we decide in the future to establish an internal sales and marketing team with technical expertise and supporting distribution capabilities to commercialize our RF filters, it could be expensive and time consuming and would require significant attention of our executive officers to manage. We may also not have sufficient resources to allocate to the sales and marketing of our filters. Any failure or delay in the development of sales, marketing and distribution capabilities, either through collaboration with one or more third parties or through internal efforts, would adversely impact the commercialization of any of our products that we obtain approval to market. As a result, our future product revenue would suffer, and we may incur significant additional losses.

We may engage in future acquisitions that could disrupt our business, cause dilution to our shareholders and harm our financial condition and operating results.

While we currently have no specific plans to acquire any other businesses, we may, in the future, make acquisitions of, or investments in, companies that we believe have products or capabilities that are a strategic or commercial fit with our current business or otherwise offer opportunities for our company. In connection with these acquisitions or investments, we may:

- issue Common Stock or other forms of equity that would dilute our existing shareholders' percentage of ownership,
- incur debt and assume liabilities, and
- incur amortization expenses related to intangible assets or incur large and immediate write-offs.

We may not be able to complete acquisitions on favorable terms, if at all. If we do complete an acquisition, we cannot assure you that it will ultimately strengthen our competitive position or that it will be viewed positively by customers, financial markets or investors. Furthermore, future acquisitions could pose numerous additional risks to our expected operations, including:

- problems integrating the purchased business, products or technologies,
- challenges in achieving strategic objectives, cost savings and other anticipated benefits,
- increases to our expenses,
- the assumption of significant liabilities that exceed the limitations of any applicable indemnification provisions or the financial resources of any indemnifying party,
- inability to maintain relationships with prospective key customers, vendors and other business partners of the acquired businesses,
- diversion of management's attention from its day-to-day responsibilities,
- difficulty in maintaining controls, procedures and policies during the transition and integration,
- entrance into marketplaces where we have no or limited prior experience and where competitors have stronger marketplace positions,
- potential loss of key employees, particularly those of the acquired entity, and
- historical financial information may not be representative or indicative of our results as a combined company.

Unsolicited takeover proposals, governance change proposals, proxy contests and certain proposals/actions by activist investors may create additional risks and uncertainties with respect to our financial position, operations, strategies and management, and may adversely affect our ability to attract and retain key employees. Any perceived uncertainties may affect the market price and volatility of our securities.

Public companies in the technology industry have been the target of unsolicited takeover proposals in the past. In the event that a third party, such as a competitor, private equity firm or activist investor makes an unsolicited takeover proposal, or proposes to change our governance policies or board of directors, or makes other proposals concerning our ownership structure or operations, our review and consideration of such proposals may be a significant distraction for our management and employees, and may require us to expend significant time and resources. Such proposals may create uncertainty for our employees, additional risks and uncertainties with respect to our financial position, operations, strategies and management, and may adversely affect our ability to attract and retain key employees. Any perceived uncertainties as to our future direction also may affect the market price and volatility of our securities.

Risks Related to Our Intellectual Property

If we fail to obtain, maintain and enforce our intellectual property rights, we may not be able to prevent third parties from using our proprietary technologies.

Our long-term success largely depends on our ability to market technologically competitive products which, in turn, largely depends on our ability to obtain and maintain adequate intellectual property protection and to enforce our proprietary rights without infringing the proprietary rights of third parties. While we rely upon a combination of our patent applications currently pending with the United States Patent and Trademark Office ("USPTO"), our trademarks, copyrights, trade secret protection and confidentiality agreements to protect the intellectual property related to our technologies, there can be no assurance that:

- our currently pending or future patent applications will result in issued patents,
- our limited patent portfolio will provide adequate protection to our core technology,
- we will succeed in protecting our technology adequately in all key jurisdictions,
- we will be able to finalize negotiations to enter into agreements pursuant to which we will license certain patents, or
- we can prevent third parties from disclosure or misappropriation of our proprietary information which could enable competitors to quickly duplicate or surpass our technological achievements, thus eroding any competitive advantage we may derive from the proprietary information.

In addition, we intend to expand our international presence, and effective patent, copyright, trademark and trade secret protection may not be available or may be limited in foreign countries.

We have a limited number of patent applications, which may not result in issued patents or patents that fully protect our intellectual property.

In the United States and internationally we had seventy-one pending patent applications as of August 17, 2020; however, there is no assurance that any of the pending applications or our future patent applications will result in patents being issued, or that any patents that may be issued as a result of existing or future applications will provide meaningful protection or commercial advantage to us.

The process of seeking patent protection in the United States and abroad can be long and expensive. Since patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain at the time of filing that we are the first to file any patent application related to our single-crystal acoustic wave filter technology. In addition, patent applications are often published as part of the patent application process, even if such applications do not issue as patents. When published, such applications will become publicly available, and proprietary information disclosed in the application will become available to others. While at present we are unaware of competing patent applications, competing applications could potentially surface.

Even if all of our pending patent applications are granted and result in registration of our patents, we cannot predict the breadth of claims that may be allowed or enforced, or that the scope of any patent rights could provide a sufficient degree of protection that could permit us to gain or keep our competitive advantage with respect to these products and technologies. For example, we cannot predict:

- the degree and range of protection any patents will afford us against competitors, including whether third parties will find ways to make, use, sell, offer to sell or import competitive products without infringing our patents;

- if and when patents will be issued;

- if third parties will obtain patents claiming inventions similar to those covered by our patents and patent applications;

- if third parties have blocking patents that could be used to prevent us from marketing our own patented products and practicing our own technology; or

- whether we will need to initiate litigation or administrative proceedings (e.g., at the USPTO) in connection with patent rights, which may be costly whether we win or lose.

As a result, the patent applications we own may fail to result in issued patents in the United States. Third parties may challenge the validity, enforceability or scope of any issued patents or patents issued to us in the future, which may result in those patents being narrowed, invalidated or held unenforceable. Even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from developing similar products that do not infringe the claims made in our patents. If the breadth or strength of protection provided by the patents we hold or pursue is threatened, we may not be able to prevent others from offering similar technology and products in the RFFE mobile market and our ability to commercialize our RF filters with technology protected by those patents could be threatened.

If we fail to obtain issued patents outside of the United States, our ability to prevent misappropriation of our proprietary information or infringement of our intellectual property rights in countries outside of the United States where our filters may be sold in the future may be significantly limited. If we file foreign patent applications related to our pending U.S. patent applications or to our issued patents in the United States, these applications may be contested and fail to result in issued patents outside of the United States or we may be required to narrow our claims. Even if some or all of our patent applications are granted outside of the United States and result in issued patents, effective enforcement of rights granted by these patents in some countries may not be available due to the differences in foreign patent and other laws concerning intellectual property rights, a relatively weak legal regime protecting intellectual property rights in these countries, and because it is difficult, expensive and time-consuming to police unauthorized use of our intellectual property when infringers are overseas. This failure to obtain or maintain adequate protection of our intellectual property rights outside of the United States could have a materially adverse effect on our business, results of operations and financial conditions.

We may be involved in lawsuits to protect or enforce our patents, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our patents or the patents of our potential licensors. To attempt to stop infringement or unauthorized use, we may need to file infringement claims, which can be expensive and time consuming and distract management.

If we pursue any infringement proceeding, a court may decide that a patent of ours or one of our licensors is not valid or is unenforceable or may refuse to stop the other party from using the relevant technology on the grounds that our patents do not cover the technology in question. Additionally, any enforcement of our patents may provoke third parties to assert counterclaims against us. Some of our current and potential competitors have the ability to dedicate substantially greater resources to enforcing their intellectual property rights than we have. Moreover, the legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, which could reduce the likelihood of success of, or the amount of damages that could be awarded resulting from, any infringement proceeding we pursue in any such jurisdiction. An adverse result in any infringement litigation or defense proceedings could put one or more of our patents at risk of being invalidated, held unenforceable, or interpreted narrowly and could put our patent applications at risk of not issuing, which could limit the ability of our filters to compete in those jurisdictions.

Interference proceedings could be provoked by third parties or brought by the USPTO to determine the priority of inventions with respect to our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to use it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms, or at all.

We need to protect our trademark rights and disclosure of our trade secrets to prevent competitors from taking advantage of our goodwill.

We believe that the protection of our trademark rights is an important factor in product recognition, protecting our brand, maintaining goodwill, and maintaining or increasing market share. We currently have five trademarks that we have filed to register with the USPTO including the Akoustis and XBAW marks and the XBAW logo - and we may expend substantial cost and effort in an attempt to register new trademarks and maintain and enforce our trademark rights. If we do not adequately protect our rights in our trademarks from infringement, any goodwill that we have developed in those trademarks could be lost or impaired.

Third parties may claim that the sale or promotion of our products, when and if we have any, may infringe on the trademark rights of others. Trademark infringement problems occur frequently in connection with the sale and marketing of products in the RFFE mobile industry. If we become involved in any dispute regarding our trademark rights, regardless of whether we prevail, we could be required to engage in costly, distracting and time-consuming litigation that could harm our business. If the trademarks we use are found to infringe upon the trademark of another company, we could be liable for damages and be forced to stop using those trademarks, and as result, we could lose all the goodwill that has been developed in those trademarks.

In addition to the protection afforded by patents and trademarks, we seek to rely on copyright, trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable, processes for which patents are difficult to enforce and any other elements of our processes that involve proprietary know-how, information or technology that is not covered by patents. For Akoustis, this includes chip layouts, circuit designs, resonator layouts and implementation, and MEMS resonator device engineering. Although we require all of our employees and certain consultants and advisors to assign inventions to us, and all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, our trade secrets and other proprietary information may be disclosed, or competitors may otherwise gain access to such information or independently develop substantially equivalent information. If we are unable to prevent material disclosure of the intellectual property related to our technologies to third parties, we will not be able to establish or maintain the competitive advantage that we believe is provided by such intellectual property, which would weaken our competitive market position, and materially adversely affect our business and operational results.

Development of certain technologies with our manufacturers may result in restrictions on jointly-developed intellectual property.

In order to maintain and expand our strategic relationship with manufacturers of our filters, we may, from time to time, develop certain technologies jointly with these manufacturers and file for further intellectual property protection and/or seek to commercialize such technologies. We may enter into joint development agreements with manufacturers to provide for joint development works and joint intellectual property rights by us and by such manufacturer. Such agreements may restrict our commercial use of such intellectual property, or may require written consent from, or a separate agreement with, that manufacturer. In other cases, we may not have any rights to use intellectual property solely developed and owned by such manufacturer or another third party. If we cannot obtain commercial use rights for such jointly-owned intellectual property or intellectual property solely owned by these manufacturers, our future product development and commercialization plans may be adversely affected.

We may be subject to claims of infringement, misappropriation or misuse of third party intellectual property that, regardless of merit, could result in significant expense and loss of our intellectual property rights.

The semiconductor industry is characterized by the vigorous pursuit and protection of intellectual property rights. We have not undertaken a comprehensive review of the rights of third parties in our field. From time to time, we may receive notices or inquiries from third parties regarding our products or the manner in which we conduct our business suggesting that we may be infringing, misappropriating or otherwise misusing patent, copyright, trademark, trade secret and other intellectual property rights. Any claims that our technology infringes, misappropriates or otherwise misuses the rights of third parties, regardless of their merit or resolution, could be expensive to litigate or settle and could divert the efforts and attention of our management and technical personnel, cause significant delays and materially disrupt the conduct of our business. We may not prevail in such proceedings given the complex technical issues and inherent uncertainties in intellectual property litigation. If such proceedings result in an adverse outcome, we could be required to:

- pay substantial damages, including treble damages if we were held to have willfully infringed;
- cease the manufacture, offering for sale or sale of the infringing technology or processes;
- expend significant resources to develop non-infringing technology or processes;
- obtain a license from a third party, which may not be available on commercially reasonable terms, or may not be available at all; or
- lose the opportunity to license our technology to others or to collect royalty payments based upon successful protection and assertion of our intellectual property against others.

In addition, our agreements with prospective customers and manufacturing partners may require us to indemnify such customers and manufacturing partners for third party intellectual property infringement claims. Pursuant to such agreements, we may be required to defend such customers and manufacturing partners against certain claims that could cause us to incur additional costs. While we endeavor to include as part of such indemnification obligations a provision permitting us to assume the defense of any indemnification claim, not all of our current agreements contain such a provision and we cannot provide any assurance that our future agreements will contain such a provision, which could result in increased exposure to us in the case of an indemnification claim.

Defense of any intellectual property infringement claims against us, regardless of their merit, would involve substantial litigation expense and would be a significant diversion of resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, obtain one or more licenses from third parties, limit our business to avoid the infringing activities, pay royalties and/or redesign our infringing technology or alter related formulations, processes, methods or other technologies, any or all of which may be impossible or require substantial time and monetary expenditure. The occurrence of any of the above events could prevent us from continuing to develop and commercialize our filters and our business could materially suffer.

Risks Related to our Financial Condition

We have a history of losses, will need substantial additional funding to continue our operations and may not achieve or sustain profitability in the future.

Our operations have consumed substantial amounts of cash since inception. We have incurred losses since our incorporation and formation in 2014. We anticipate that our operating expenses will increase in the foreseeable future as we continue to pursue the development of our patent-pending high purity piezoelectric materials technology, invest in marketing, sales and distribution of our RF filters to grow our business, acquire customers, commercialize our technology in the mobile wireless market and continue to invest in our manufacturing facility in Canandaigua, NY. These efforts may prove more expensive than we currently anticipate, and we may not succeed in generating sufficient revenues to offset these higher expenses. In addition, we expect to incur significant expenses related to regulatory requirements and our ability to obtain, protect, and defend our intellectual property rights.

We may also encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may increase our capital needs and/or cause us to spend our cash resources faster than we expect. Accordingly, we will need to obtain substantial additional funding in order to continue our operations.

To date, we have financed our operations through a mix of investments from private investors, public offerings of equity and debt securities, foundry services revenue, RF filter revenue, and grant funding, and we expect to continue to utilize such means of financing for the foreseeable future. Additional funding from those or other sources may not be available when or in the amounts needed, on acceptable terms, or at all. If we raise additional capital through the sale of equity, or securities convertible into equity, it would result in dilution to our then existing stockholders, which could be significant depending on the price at which we may be able to sell our securities and the amount of securities we issue. If we raise additional capital through the incurrence of indebtedness, such as our convertible notes due in 2023, we may become subject to additional covenants restricting our business activities, and holders of debt instruments may have rights and privileges senior to those of our equity investors. In addition, servicing the interest and principal repayment obligations under debt facilities could divert funds that would otherwise be available to support research and development, or commercialization activities. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate the production and sale of our RF filter products, our R&D programs for our acoustic wave filter technology or any future commercialization efforts. Any of these events could materially and adversely affect our business, financial condition and prospects, and could cause our business to fail.

We may not be entitled to forgiveness of our recently received Paycheck Protection Program loan, and our application for the Paycheck Protection Program loan could in the future be determined to have been impermissible or could result in damage to our reputation.

On May 20, 2020, we received loan proceeds of approximately $1.6 million (the “PPP Loan”) pursuant to the Paycheck Protection Program under the CARES Act administered by the U.S. Small Business Administration (the “SBA”). We are using the PPP Loan to retain current employees, maintain payroll and make lease and utility payments. The PPP Loan is evidenced by a promissory note, dated as of May 20, 2020, issued in favor of Bank of America, NA, which contains customary events of default relating to, among other things, payment defaults and breaches of representations and warranties. The PPP Loan is scheduled to mature two years from the date of funding of the PPP Loan and accrues interest at a rate of 1.00% per annum.

In connection with applying for the PPP Loan, we were required to certify, among other things, that the economic uncertainty at the time made the PPP Loan request necessary to support our ongoing operations. We made this certification in good faith after analyzing, among other things, the maintenance of our workforce and our need for additional funding to continue operations to offset the effects of the COVID-19 pandemic. Following this analysis, we believe that we satisfied all eligibility criteria for the PPP Loan, and that our receipt of the PPP Loan is consistent with the broad objectives of the CARES Act. The certification described above did not contain any objective criteria and is subject to interpretation.

The SBA has issued guidance relating to the Paycheck Protection Program stating that it is unlikely that a public company with substantial market value and access to capital markets will be able to make the required certification in good faith. The lack of clarity regarding loan eligibility under the Paycheck Protection Program has resulted in significant media coverage and controversy with respect to public companies applying for and receiving loans. If, despite our good-faith belief that given our circumstances we satisfied all eligible requirements for the PPP Loan, we are later determined to have violated any applicable laws or regulations that may apply to us in connection with the PPP Loan or it is otherwise determined that we were ineligible to receive the PPP Loan, we may be required to repay the PPP Loan in its entirety and/or be subject to additional penalties, which could also result in adverse publicity and damage to our reputation. Should we be audited or reviewed by federal or state regulatory authorities as a result of filing an application for forgiveness of the PPP Loan or otherwise, such audit or review could result in the diversion of management's time and attention and legal and reputational costs. If we were to be audited or reviewed and receive an adverse determination or finding in such audit or review, we could be required to return the full amount of the PPP Loan. Any of these events could have a material adverse effect on our business, results of operations and financial condition.

Servicing our debt requires a significant amount of cash or Common Stock, and we may not have sufficient cash flow from our business or have the ability to issue the necessary number of shares of Common Stock to pay our substantial debt.

Pursuant to the convertible note offerings we completed in the calendar year 2018, we incurred $25.0 million of indebtedness. This level of debt could have significant consequences on future operations, including:

- increasing our vulnerability to adverse economic and industry conditions;
- making it more difficult for us to meet our payment and other obligations;
- making it more difficult to obtain any necessary future financing for working capital, capital expenditures, debt service requirements or other purposes;
- requiring the dedication of a substantial portion of any cash flow from operations to service our indebtedness, thereby reducing the amount of cash flow available for other purposes, including capital expenditures;
- placing us at a possible competitive disadvantage with competitors that are less leveraged than us or have better access to capital than we have; and
- limiting our flexibility in planning for, or reacting to, changes in our business and the markets in which we compete.

Accrued interest on our 6.5% Convertible Senior Notes due 2023 is payable quarterly in cash and we have the ability, at our option, to pay accrued interest on our 6.5% Convertible Senior Secured Notes due 2023 in cash or freely tradable shares of Common Stock. Our ability to make scheduled payments of interest depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to service our debt in cash and make necessary capital expenditures. Furthermore, we may not issue Common Stock to make payments of interest to the extent such issuance would violate Nasdaq Marketplace Rule 5635(d), which limits the amount of Common Stock that we may privately issue without prior stockholder approval. Therefore, our ability to repay debt with Common Stock will depend on the capital markets and whether we have obtained stockholder approval for such issuances of Common Stock.

If we are unable to generate sufficient cash flow or issue Common Stock to satisfy payment obligations under our convertible notes, we may be required to adopt one or more alternatives, such as selling assets or obtaining additional equity capital on terms that may be onerous or highly dilutive. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

Furthermore, our $15.0 million principal amount of 6.5% Convertible Senior Secured Notes due 2023 are secured by a first priority lien on substantially all of the Company's and the Company's existing and future subsidiaries' assets. Therefore, if we default on any of our debt obligations, it could result in our noteholders foreclosing on our assets. In such an event, the noteholders' rights to such assets would likely be superior to those of our stockholders.

We are subject to a number of restrictive covenants relating to certain of our indebtedness, which may restrict our business and financing activities. Additionally, certain of our indebtedness is secured by a first priority lien on our and our subsidiaries assets', which may limit our ability to obtain additional financing.

The indentures governing our convertible notes imposes operating and other restrictions on us. Such restrictions may affect, and in many respects limit or prohibit, among other things, our ability to:

- incur or guarantee additional indebtedness;
- issue preferred stock or stock of any subsidiary;
- make investments or acquisitions;
- merge, consolidate, dissolve or liquidate;
- engage in certain asset sales (including the sale of stock of our subsidiary);
- grant liens (except permitted liens);
- pay dividends;
- engage in transactions with our affiliates; and
- enter into a new line of business.

The restrictions in the indentures governing the convertible notes may prevent us from taking actions that we believe would be in the best interests of our business, and may make it difficult for us to successfully execute our business strategy or effectively compete with companies that are not similarly restricted. We also may incur future debt obligations that might subject us to additional restrictive covenants that could affect our financial and operational flexibility. Our ability to comply with these covenants in future periods will largely depend on the pricing of our products and services, and our ability to successfully implement our overall business strategy. We cannot assure you that we will be granted waivers or amendments to these agreements if for any reason we are unable to comply with these agreements. The breach of any of these covenants and restrictions could result in a default under the indenture governing the promissory notes, which could result in an acceleration of our indebtedness.

Additionally, potential lenders or other sources of capital may be less likely to extend financing to us due to their interests' potential subordination to the first priority lien on substantially all of the Company's and the Company's existing and future subsidiaries' assets securing the Company's $15.0 million principal amount of 6.5% Convertible Senior Secured Notes due 2023.

Our ability to raise capital may be materially adversely impacted by COVID-19.

A sustained disruption in the capital markets from the COVID-19 pandemic could negatively impact our ability to raise capital. In the past, we have financed our operations primarily by the issuance of equity and debt securities. However, we cannot predict when the macro-economic disruption stemming from COVID-19 will ebb or when the economy will return to pre-COVID-19 levels, if at all. This macro-economic disruption may disrupt our ability to raise additional capital to finance our operations in the future, which could materially and adversely affect our business, financial condition and prospects, and could ultimately cause our business to fail.

Risks Related to Regulatory Requirements

Government regulation may adversely affect our business.

The effects of regulation may materially and adversely impact our business. For example, regulatory policies of the FCC relating to radio frequency emissions, consumer protection laws of the FTC, product safety regulatory activities of the Consumer Products Safety Commission, and environmental regulatory activities of the EPA could impede sales of our products in the United States. We and our customers are also subject to various import and export laws and regulations. If we fail to continue to comply with these regulations, we may be unable to manufacture the affected products or ship these products to certain customers and be subject to investigations, sanctions, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties, or injunctions.

As described above under the risk factor entitled “We may be subject to risks related to doing business in, and having counterparties based in, foreign countries,” our business is also increasingly subject to complex foreign and U.S. laws and regulations, including but not limited to, anti-corruption laws, such as the Foreign Corrupt Practices Act and equivalent laws in other jurisdictions, antitrust or competition laws, and data privacy laws, among others. Foreign governments may also impose tariffs, duties and other import restrictions on components that we obtain from non-domestic suppliers and may impose export restrictions on products that we sell internationally. These tariffs, duties or restrictions could materially and adversely affect our business, financial condition and results of operations.

Our product or manufacturing standards could also be impacted by new or revised environmental rules and regulations or other social initiatives. Those rules, or similar rules that may be adopted in other jurisdictions, could adversely affect our costs, the availability of minerals used in our products and our relationships with customers and suppliers.

We may incur substantial expenses in connection with regulatory requirements, and any regulatory compliance failure could cause our business to suffer.

The wireless communications industry is subject to ongoing regulatory obligations and review. See “Business - Government Regulations” above. Maintaining compliance with these requirements may result in significant additional expense to us, and any failure to maintain such compliance could cause our business to suffer.

Noncompliance with applicable regulations or requirements could also subject us to investigations, sanctions, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties, or injunctions. An adverse outcome in any such litigation could require us to pay contractual damages, compensatory damages, punitive damages, attorneys’ fees and costs. These enforcement actions could harm our business, financial condition and results of operations. If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, financial condition and results of operations could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management’s attention and resources and an increase in professional fees.

Compliance with regulations regarding the use of “conflict minerals” could limit the supply and increase the cost of certain metals used in manufacturing our products.

Regulations in the United States require that we determine whether certain materials used in our products, referred to as conflict minerals, originated in the Democratic Republic of the Congo or adjoining countries, or originated from recycled or scrap sources. We incur costs associated with our policies and procedures to comply with the applicable rules and due diligence procedures. In addition, verification and reporting requirements could affect the sourcing and availability of minerals that are used in the manufacture of our products, and we may face reputational and competitive challenges if we are unable to sufficiently verify the origins of all conflict minerals used in our products. We may also face challenges with government regulators, potential customers, suppliers and manufacturers if we are unable to sufficiently verify that the metals used in our products are conflict free.

There could be an adverse change or increase in the laws and/or regulations governing our business.

We and our operating subsidiary are subject to various laws and regulations in different jurisdictions, and the interpretation and enforcement of laws and regulations are subject to change. We are also subject to different tax regulations in each of the jurisdictions where we conduct our business or where our management or the management of our operating subsidiary is located. We expect that the scope and extent of regulation in these jurisdictions, as well as regulatory oversight and supervision, will generally continue to increase. There can be no assurance that future regulatory, judicial and legislative changes in any jurisdiction will not have a material adverse effect on us or hinder us in the operation of our business. In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations applicable to us.

These current or future laws and regulations may impair our research, development or production efforts or impact the research activities we pursue. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions, which could cause our financial condition to suffer.

Investment Risks

You could lose all of your investment.

An investment in our securities is speculative and involves a high degree of risk. Potential investors should be aware that the value of an investment in the Company may go down as well as up. In addition, there can be no certainty that the market value of an investment in the Company will fully reflect its underlying value.

The value of our Common Stock could be volatile.

The overall market and the price of our Common Stock may fluctuate greatly. During the fiscal year ended June 30, 2020, our Common Stock traded on the Nasdaq Capital Market as high as $9.40 and as low as $3.76 per share. An active, liquid and orderly market for our Common Stock may not be sustained, which could depress the trading price of our Common Stock. The trading price of our Common Stock may be significantly affected by various factors, including quarterly fluctuations in our operating results, changes in investors' and analysts' perception of the business risks and conditions of our business, issuance of additional shares in connections with strategic transactions or acquisitions we may make, our ability to meet the earnings estimates and other performance expectations of financial analysts or investors, unfavorable commentary or downgrades of our stock by equity research analysts, and general economic or political conditions.

Our stock trades in low volumes, which may make it more difficult for investors to sell their shares quickly.

Our Common Stock trades on the Nasdaq Capital Market, but it trades in low volumes, which may make it more difficult for investors to sell their shares quickly. This situation may be attributable to a number of factors, including but not limited to the fact that we are an emerging commercial company that is relatively unknown to stock analysts, stockbrokers, institutional investors, and others in the investor community. In addition, investors may be risk averse to investments in emerging commercial companies. As a consequence, it may be more difficult for investors to sell their shares quickly and our stock price may be more sensitive to sales of our Common Stock in the market. The low trading volume is outside of our control and may not increase or, if it increases, may not be maintained.

Stockholders may experience dilution of their ownership interests because of the future issuance of additional shares of our Common Stock or preferred stock or other securities that are convertible into or exercisable for our Common Stock or preferred stock.

In the future, we may issue our authorized but previously unissued equity securities, resulting in the dilution of the ownership interests of our stockholders. The Company is authorized to issue an aggregate of 100,000,000 shares of Common Stock and 5,000,000 shares of Preferred Stock. We may issue additional shares of our Common Stock or other securities that are convertible into or exercisable for our Common Stock in connection with hiring or retaining employees, future acquisitions, future sales of our securities for capital raising purposes, or for other business purposes. In addition, as of August 17, 2020, warrants and options to purchase 395,700 and 2,292,415 shares, respectively, of our Common Stock were outstanding. Additionally, our outstanding convertible senior notes were convertible into approximately 4.96 million shares of Common Stock on such date. The future issuance of additional shares of our Common Stock may create downward pressure on the trading price of the Common Stock. We will need to raise additional capital in the near future to meet our working capital needs, and there can be no assurance that we will not be required to issue additional shares, warrants or other convertible securities in the future in conjunction with these capital raising efforts, including at a price (or exercise prices) below the price you paid for your stock.

Delaware law, our charter documents, the ability of our Board of Directors to issue additional stock, and certain provisions of our convertible notes could impede or discourage a takeover or change of control that stockholders may consider favorable.

As a Delaware corporation, we are subject to certain anti-takeover provisions. Under Delaware law, a corporation may not engage in a business combination with any holder of 15 percent or more of its capital stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction. Accordingly, our Board of Directors could rely on Delaware law to prevent or delay an acquisition of our company. In addition, certain provisions of our certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control or changes in our management. These provisions include only our Board of Directors being able to fill vacancies on the Board and various limitations in our bylaws on stockholder meeting, including advance notice requirements for stockholders to make nominations of candidates for election as directors or to bring matters before an annual meeting of stockholders and our stockholders not having the ability to call a special meeting.

Our Board of Directors is authorized to issue up to 5,000,000 shares of preferred stock with powers, rights and preferences designated by it. Shares of voting or convertible preferred stock could be issued, or rights to purchase such shares could be issued, to create voting impediments or to frustrate persons seeking to effect a takeover or otherwise gain control of the Company. The ability of the Board to issue such additional shares of preferred stock, with rights and preferences it deems advisable, could discourage an attempt by a party to acquire control of the Company by tender offer or other means. Such issuances could therefore deprive stockholders of benefits that could result from such an attempt, such as the realization of a premium over the market price for their shares in a tender offer or the temporary increase in market price that such an attempt could cause. Moreover, the issuance of such additional shares of preferred stock to persons supporting of the Board of Directors could make it more difficult to remove incumbent managers and directors from office even if such change were to be favorable to stockholders generally.

Certain provisions of the $15.0 million and $10.0 million principal amounts of convertible notes we issued in May 2018 and October 2018, respectively, could make it more difficult or more expensive for a third party to acquire us. If the Company undergoes a "qualifying fundamental change," as such term is defined in the respective indentures for the notes, under certain circumstances holders who convert their notes in connection with such a qualifying fundamental change will be entitled to a "qualifying fundamental change payment" equal to $130 per $1,000 of aggregate principal of notes converted. In addition, the indentures and the convertible notes prohibit us from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes our obligations under the convertible notes and the indenture. These and other provisions in the indentures could deter or prevent a third party from acquiring the Company.

These types of provisions could make it more difficult for a third party to acquire control of us, even if the acquisition would be beneficial to our stockholders.

Our bylaws provide, subject to certain exceptions, that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for certain stockholder litigation matters, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees or stockholders.

Our bylaws provide, subject to limited exceptions, that the Court of Chancery of the State of Delaware will, to the fullest extent permitted by law, be the sole and exclusive forum for any claims, including any derivative actions or proceedings brought on our behalf, (1) that are based upon a violation of a duty by a current or former director or officer or stockholder in such capacity or (2) that may be brought in the Court of Chancery pursuant to the Delaware General Corporation Law. Any person or entity purchasing or otherwise acquiring any interest in shares of our common stock shall be deemed to have notice of and to have consented to the provisions of our bylaws described above. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, other employees or stockholders which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provision that is contained in our bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could materially adversely affect our business, financial condition and results of operations.

We do not anticipate paying dividends on our Common Stock.

Cash dividends have never been declared or paid on our Common Stock, and we do not anticipate such a declaration or payment for the foreseeable future. We expect to use future earnings, if any, to fund business growth. Therefore, stockholders will not receive any funds absent a sale of their shares of Common Stock. If we do not pay dividends, our Common Stock may be less valuable because a return on your investment will only occur if our stock price appreciates. We cannot assure stockholders that our stock price will appreciate or that they will receive a positive return on their investment if and when they sell their shares.

As a smaller reporting company and a non-accelerated filer, we are subject to scaled disclosure requirements that may make it more challenging for investors to analyze our results of operations and financial prospects and may cause investors to find our Common Stock less attractive.

As a smaller reporting company, we are subject to scaled disclosure requirements that may make it more challenging for investors to analyze our results of operations and financial prospects. For instance, as a "smaller reporting company," which is generally defined as a company with less than $250 million of public float or a company with less than $100 million in annual revenues and either no public float or a public float of less than $700 million, we may elect to provide simplified executive compensation disclosures in our filings and take advantage of other decreased disclosure obligations in our filings with the SEC, including being required to provide only two years of audited financial statements in our annual reports. Consequently, it may be more challenging for investors to analyze our results of operations and financial prospects. Additionally, under current SEC rules, we are no longer an "accelerated filer" and so not required to include an auditor attestation of the effectiveness of our internal control over financial reporting in this Annual Report on Form 10-K. We cannot predict if investors will find our Common Stock less attractive because we may rely on these reduced requirements. 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 the price of shares of our Common Stock may be more volatile.

Being a public company is expensive and administratively burdensome.

As a public reporting company, we are subject to the information and reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and other federal securities laws, rules and regulations related thereto, including compliance with the Sarbanes-Oxley Act. Complying with these laws and regulations requires the time and attention of our Board of Directors and management and increases our expenses. Among other things, we are required to:

- maintain and evaluate a system of internal control over financial reporting in compliance with the requirements of Section 404 of the Sarbanes-Oxley Act and the related rules and regulations of the SEC and the Public Company Accounting Oversight Board;
- maintain policies relating to disclosure controls and procedures;
- prepare and distribute periodic reports in compliance with our obligations under federal securities laws;
- institute a more comprehensive compliance function, including with respect to corporate governance; and
- involve, to a greater degree, our outside legal counsel and accountants in the above activities.

The costs of preparing and filing annual and quarterly reports, proxy statements and other information with the SEC and furnishing audited reports to stockholders is expensive and much greater than that of a privately-held company, and compliance with these rules and regulations may require us to hire additional financial reporting, internal controls and other finance personnel, and will involve a material increase in regulatory, legal and accounting expenses and the attention of management. There can be no assurance that we will be able to comply with the applicable regulations in a timely manner, if at all. In addition, being a public company makes it more expensive for us to obtain director and officer liability insurance. In the future, we may be required to accept reduced coverage or incur substantially higher costs to obtain this coverage. These factors could also make it more difficult for us to attract and retain qualified executives and members of our Board of Directors, particularly directors willing to serve on the Audit Committee of our Board of Directors.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our current headquarters in Huntersville, NC is 22,000 square feet, and its base rent is approximately $21,000 per month with a term expiring February 2023. On June 26, 2017, the Company acquired a 120,000 square foot MEMS fabrication facility in Canandaigua, NY, which as of June 30, 2020 houses 50 employees (the "NY Facility"). In connection with the offering and sale of senior secured convertible notes in May 2018, the Company granted a first priority lien to The Bank of New York Mellon Trust Company, N.A. on substantially all of its current and future assets, including a mortgage on the NY Facility. Additionally, the Company has entered into a Lease and Project Agreement and a Company Lease Agreement with the Ontario County Industrial Development Agency, a public benefit corporation of the State of New York (the "OCIDA"), covering the NY Facility, pursuant to which the Company leases the NY Facility to the OCIDA for nominal consideration and the OCIDA leases the NY Facility back to the Company for annual rent payments set forth in such agreements. The Company believes its facility in Huntersville, NC, along with the NY Facility, will be suitable and sufficient to meet the Company's needs for the next several years.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we may become involved in various lawsuits and legal proceedings that arise in the ordinary course of business. Litigation is subject to inherent uncertainties, and an adverse result in any such matters may arise from time to time that may have an adverse effect on our business, financial condition, results of operations and prospects.

We are currently not aware of any material pending legal proceedings to which we are a party or of which any of our property is the subject, nor are we aware of any such proceedings that are contemplated by any governmental authority.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Market Information and Holders

Our Common Stock is currently traded on the Nasdaq Capital Market under the symbol "AKTS."

As of August 17, 2020, 38,067,550 shares of our Common Stock were issued and outstanding and were held by approximately 119 stockholders of record.

Dividends

We have never paid any dividends on our capital stock and do not anticipate paying any cash dividends on our Common Stock in the foreseeable future. We intend to retain future earnings to fund ongoing operations and future capital requirements. Any future determination to pay dividends will be at the discretion of our Board of Directors and will be dependent upon financial condition, results of operations, capital requirements and such other factors as the Board of Directors deems relevant.

Warrants and Options

As of June 30, 2020, there were outstanding warrants and options to purchase 395,700 shares of our Common Stock and 2,294,415 shares of our Common Stock, respectively.

Equity Compensation Plan Information

The following table provides information as of June 30, 2020, relating to our equity compensation plans, under which grants of options, restricted stock, and other equity awards may be made from time to time:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights		Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)
	(a)		(b)	(c)
Equity compensation plans approved by security holders - options	2,294,415(1)	$	5.84	3,758,226(3)
Equity compensation plans approved by security holders – restricted stock units	1,580,586(2)	$	0.00	–
Equity compensation plans not approved by security holders	–		–	–
Total	3,875,001			3,758,226(3)

(1) Consists of (i) 160,000 shares of Common Stock issuable upon the exercise of outstanding options issued under the Company's 2015 Equity Incentive Plan (the "2015 Plan"), (ii) 990,207 issuable under the Company's 2016 Stock Incentive Plan (the "2016 Plan"), (iii) and 1,144,208 issuable under the Company's 2018 Stock Incentive Plan (the "2018 Plan").

(2) Consists of 344,500 shares of Common Stock to be issued upon the vesting of outstanding restricted stock units issuable under the 2016 Plan (the "2016 Plan") and 1,236,086 issuable under the 2018 Plan.

(3) As of June 30, 2020, 3,758,226 additional shares of Common Stock remained available for future issuance under the 2018 Plan. No additional grants will be made under the Company's 2014 Stock Plan (the "2014 Plan"), the 2015 Plan or the 2016 Plan.

Recent Sales of Unregistered Securities

We have not sold any equity securities during the fiscal year ended June 30, 2020 that were not registered under the Securities Act, other than as previously reported in our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K filed with the SEC.

Repurchases

Unvested restricted stock awards granted under the 2014 Plan and the 2015 Plan are subject to repurchase options upon certain terminations of the respective recipient's service with the Company. Under the terms of the respective award agreements, repurchases will generally be made for no value or for par value. As of June 30, 2020, 55,500 shares of restricted stock remained subject to repurchase options that expire as the restricted shares vest generally through August 2020. We repurchased 1,000 shares of restricted stock pursuant to these repurchase options during the fiscal year ended June 30, 2020.

ITEM 6. SELECTED FINANCIAL DATA

Not applicable.

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

The following management's discussion and analysis should be read in conjunction with the historical financial statements and the related notes thereto contained in this Annual Report on Form 10-K. See also the "Cautionary Note Regarding Forward-Looking Information" on page ii of this Report.

The following discussion highlights the results of operations and the principal factors that have affected our financial condition, as well as our liquidity and capital resources for the periods described, and provides information that management believes is relevant for an assessment and understanding of the statements of financial condition and results of operations presented herein. The following discussion and analysis are based on the audited financial statements contained in this Report, which we have prepared in accordance with United States generally accepted accounting principles. You should read the discussion and analysis together with such financial statements and the related notes thereto.

Overview and Plan of Operation

Akoustis® is an emerging commercial product company focused on developing, designing, and manufacturing innovative RF filter solutions for the wireless industry, including for products such as smartphones and tablets, network infrastructure equipment, WiFi Customer Premise Equipment ("CPE") and defense applications. Filters are critical in selecting and rejecting signals, and their performance enables differentiation in the modules defining the RF front-end ("RFFE"). Located between the device's antenna and its digital backend, the "RFFE" is the circuitry that performs the analog signal processing and contains components such as amplifiers, filters and switches. We have developed a proprietary microelectromechanical system ("MEMS") based bulk acoustic wave ("BAW") technology and a unique manufacturing process flow, called "XBAW", for our filters produced for use in RFFE modules. Our XBAW™ filters incorporate optimized high purity piezoelectric materials for high power, high frequency and wide bandwidth operation. We own and/or have filed applications for patents on the core resonator device technology, manufacturing facility and intellectual property ("IP") necessary to produce our RF filter designs and operate as a "pure-play" RF filter supplier, aligning with the front-end module manufacturers that seek to acquire high performance filters to expand their module businesses.

Our initial RF filter designs target ultra-high band, sub 7 GHz 4G/LTE, 5G, WiFi and defense bands and we expect our filter solutions will address problems (such as loss, bandwidth, power handling, and isolation) created by this growing number of frequency bands in the RFFE of mobile devices, infrastructure and premise equipment. We have prototyped, sampled and begun commercial shipments of our single-band low-loss BAW filter designs for 4G/LTE frequency bands, 5G frequency bands and 5GHz WiFi bands, which are suited to competitive BAW solutions and historically cannot be addressed with low-band, lower power handling surface acoustic wave ("SAW") technology.

We plan to pursue RF filter design and R&D development agreements and potentially joint ventures with target customers and other strategic partners, although we cannot guarantee we will be successful in these efforts. These types of arrangements may subsidize technology development costs and qualification, filter design costs, and offer complementary technology and market intelligence and other avenues to revenue. However, we intend to retain ownership of our core technology, intellectual property, designs, and related improvements. We expect to pursue development of catalog designs for multiple customers and to offer such catalog products in multiple sales channels.

Please see Item 1. Business for more information.

Critical Accounting Policies

The following discussion and analysis of our financial condition and results of operations is based upon our financial statements, which have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"). 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 its 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.

Derivative Liability

The Company evaluates its options, warrants, convertible notes, and other contracts, if any, to determine if those contracts or embedded components of those contracts qualify as derivatives to be separately accounted for in accordance with paragraph 815-10-05-4 and Section 815-40-25 of the FASB Accounting Standards Codification. The result of this accounting treatment is that the fair value of the embedded derivative is marked-to-market each balance sheet date and recorded as either an asset or a liability. The change in fair value is recorded in the consolidated statement of operations as other income or expense. Upon conversion, exercise or cancellation of a derivative instrument, the instrument is marked to fair value at the date of conversion, exercise or cancellation and then the related fair value is reclassified to equity.

In circumstances where the embedded conversion option in a convertible instrument is required to be bifurcated and there are also other embedded derivative instruments in the convertible instrument that are required to be bifurcated, the bifurcated derivative instruments are accounted for as a single, compound derivative instrument.

The classification of derivative instruments, including whether such instruments should be recorded as liabilities or as equity, is re-assessed at the end of each reporting period. Equity instruments that are initially classified as equity that become subject to reclassification are reclassified to liability at the fair value of the instrument on the reclassification date. Derivative instrument liabilities will be classified in the balance sheet as current or non-current based on whether or not net-cash settlement of the derivative instrument is expected within 12 months of the balance sheet date.

The Company adopted Section 815-40-15 of the FASB Accounting Standards Codification ("Section 815-40-15") to determine whether an instrument (or an embedded feature) is indexed to the Company's own stock. Section 815-40-15 provides that an entity should use a two-step approach to evaluate whether an equity-linked financial instrument (or embedded feature) is indexed to its own stock, including evaluating the instrument's contingent exercise and settlement provisions.

The Company utilizes a Monte Carlo simulation to compute the fair value of the derivative liability and to mark to market the fair value of the derivative at each balance sheet date. The Company records the change in the fair value of the derivative as other income or expense in the consolidated statements of operations.

The Company utilizes the with-and-without method, a form of the income approach model to compute the fair value of its embedded derivatives associated with its convertible notes. The fair value of the embedded derivatives represents the difference in the present value of anticipated cash flows assuming the feature is present as compared to a security without the same feature. The Company records the change in the fair value of the derivative as other income or expense in the consolidated statements of operations.

Fair Value of Financial Instruments

The carrying amounts of cash and cash equivalents and accounts payable approximate fair value due to the short-term nature of these instruments.

The Company measures the fair value of financial assets and liabilities based on the guidance of ASC 820, "*Fair Value Measurements and Disclosures*," which defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements.

ASC 820 defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. ASC 820 also establishes a fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

Fair value measurements are categorized using a valuation hierarchy for disclosure of the inputs used to measure fair value, which prioritize the inputs into three broad levels:

Level 1 - Quoted prices are available in active markets for identical assets or liabilities as of the reporting date. Active markets are those in which transactions for the asset or liability occur in sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2 - Pricing inputs are other than quoted prices in active markets included in level 1, which are either directly or indirectly observable as of the reported date, and include those financial instruments that are valued using models or other valuation methodologies.

Level 3 - Pricing inputs include significant inputs that are generally less observable from objective sources. These inputs may be used with internally developed methodologies that result in management's best estimate of fair value.

Stock-based Compensation

The Company recognizes compensation expense for all stock-based payments in accordance with ASC 718 "*Compensation - Stock Compensation*". Under fair value recognition provisions, the Company recognizes stock-based compensation net of forfeitures and recognizes compensation cost only for those shares expected to vest over the requisite service period of the award.

Restricted stock awards and restricted stock units are granted at the discretion of the Company. These awards are restricted as to the transfer of ownership and generally vest over the requisite service periods, typically over a four-year period (vesting on a straight-line basis). The fair value of a stock award is equal to the fair market value of a share of Company stock on the grant date.

The fair value of an option award is estimated on the date of grant using the Black-Scholes option valuation model. The Black-Scholes option valuation model requires the development of assumptions that are inputs into the model. These assumptions are the value of the underlying share, the expected stock volatility, the risk-free interest rate, the expected life of the option, and the dividend yield on the underlying stock. Expected volatility is calculated using the historical volatilities of the Company's common stock traded on the Nasdaq Capital Market. Risk-free interest rates are calculated based on continuously compounded risk-free rates for the appropriate term. The dividend yield is assumed to be zero as the Company has never paid or declared any cash dividends on its Common Stock and does not intend to pay dividends on its Common Stock in the foreseeable future. The Company accounts for the impact of forfeitures as they occur.

Determining the appropriate fair value model and calculating the fair value of stock-based payment awards requires the input of the subjective assumptions described above. The assumptions used in calculating the fair value of stock-based payment awards represent management's best estimates, which involve inherent uncertainties and the application of management's judgment. As a result, if factors change and the Company uses different assumptions, our stock-based compensation could be materially different in the future. In addition, the Company is required to account for the impact of forfeitures as the forfeitures for those shares occur. If the Company's actual forfeitures are material, the stock-based compensation could be significantly different from what the Company has recorded in the current period.

Results of Operations

Our results of operations are presented for the fiscal years ended June 30, 2020 and June 30, 2019.

Year Ended June 30, 2020 Compared to Year Ended June 30, 2019

Revenue

The Company recorded revenue of $1.8 million for the year-ended June 30, 2020 as compared to $1.4 million for the year ended June 30, 2019. The increase of $0.4 million was primarily due to an increase in filter revenue of $0.5 million and an increase in engineering services of $0.2 million. These increases were partially offset by a decrease in MEMS revenue of $0.3 million, a product line that the Company exited during fiscal year 2020, and a decrease in grant revenue of $0.1 million.

Cost of Revenue

The Company recorded cost of revenue of $2.4 million in fiscal year 2020 as compared to $1.0 million for fiscal year 2019. The $1.4 million increase is primarily due to costs associated with filter revenue which increased by $1.1 million as well as a write-down of inventory to net realizable value ("NRV") in the amount of $0.4 million. Cost of revenue includes direct labor, material, NRV adjustments, and facility costs primarily associated with the foundry services revenue, manufacturing of filter product and engineering services.

Research and Development Expenses

R&D expenses were $20.5 million for the year ended June 30, 2020, which were $1.4 million, or 8%, higher than the prior year amount of $19.1 million. The year-over-year increase was primarily in the areas of R&D personnel, stock-based compensation, depreciation, and facility costs. R&D expenses include personnel costs, stock-based compensation, facility and material costs and depreciation expense. Personnel costs, including stock-based compensation, increased by $0.5 million over fiscal year 2019 primarily due to R&D personnel in our acquired NY Facility, as well as incremental R&D hires in our North Carolina location. Depreciation expense increased by $0.6 million and 25% due to additional capital expenditures placed into service in fiscal year 2020. In addition, facility and material costs, which include utilities, repair and maintenance, R&D supplies and equipment parts, increased by $0.2 million compared to the prior year.

General and Administrative Expenses

General and administrative ("G&A") costs include salaries and wages for executive and administrative staff, stock-based compensation, professional fees, insurance costs and other general costs associated with the administration of our business. General and administrative expenses for the year ended June 30, 2020 were $10.9 million versus $8.9 million for the comparative period ended June 30, 2019. The increase of $2.0 million, or 22%, was primarily driven by an increase in compensation, including stock-based compensation and severance expense of $1.2 million, an increase in professional fees of $0.4 million and an increase in sales and marketing expense of $0.2 million.

Other Income/(Expense)

Other expenses for the year ended June 30, 2020 were $4.1 million compared to other expenses of $1.7 million in fiscal year 2019. The $2.4 million increase in expense was due to an increase debt discount amortization of $1.3 million, an increase in interest expense of $0.2million, a decrease in interest income of $0.2 million and changes in the real estate contingent liability and derivative liabilities which resulted in reduced gains of $0.6 million.

Net Loss

The Company recorded a net loss of $36.1 million for the year ended June 30, 2020, compared to a net loss of $29.2 million for the year ended June 30, 2019. The year-over-year incremental loss of $6.9 million, or 23.6%, was primarily driven by an increase in interest expense of $1.7 million, higher personnel costs of $2.3 million (primarily related to research and development), an increase in R&D/Fabrication supplies of $0.2 million, an increase in depreciation expense of $0.6 million, an increase in general expenses (primarily professional fees) of $0.8 million and an increase in valuation of contingent liabilities of $0.6 million.

Liquidity and Capital Resources

Since inception, the Company has recorded approximately $1.1 million of revenue from contract research and government grants and $2.4 million of revenue from microelectromechanical systems ("MEMS") foundry and engineering review services. Our operations thus far have been funded primarily with sales of equity and debt securities, as well as contract research and government grants, foundry services and engineering services.

The Company had $44.4 million of cash on hand as of June 30, 2020, which reflects an increase of $14.2 million compared to $30.2 million as of June 30, 2019. The $14.2 million increase is primarily due to $43.1 million of cash proceeds from sales of common stock, $1.6 million received from a PPP loan, and $0.7 million received from various equity plans. Offsetting the cash proceeds were cash used in operating activities of $21.3 million and cash used for capital expenditures of $9.9 million.

Financing Activities

On May 8, 2020, the Company entered into an ATM Equity Offering^{SM} Sales Agreement (the "Sales Agreement") with BofA Securities, Inc. and Piper Sandler & Co. (each, a "Sales Agent" and, together, the "Sales Agents"). Pursuant to the terms of the Sales Agreement, the Company may sell from time to time through the Sales Agents shares of Common Stock having an aggregate offering price of up to $50,000,000. Sales, if any, may be made by means of transactions that are deemed to be "at the market" offerings as defined in Rule 415 under the Securities Act, including block trades, ordinary brokers' transactions on the Nasdaq Capital Market or otherwise at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices or by any other method permitted by law. As of June 30, 2020, the Company had sold 1,392,661 shares of Common Stock under the Sales Agreement for proceeds of approximately $11.0 million, net of approximately $0.2 million of compensation paid to the sales agents, but excluding transaction expenses.

On May 20, 2020, Akoustis, Inc., the operating subsidiary of the Company, issued a promissory note (the "Promissory Note") in favor of Bank of America, NA (the "Lender") that provides for a loan in the principal amount of $1.6 million (the "PPP Loan") pursuant to the Paycheck Protection Program (the "PPP") under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"), which is administered by the United States Small Business Administration (the "SBA"). The PPP Loan is scheduled to mature two years from the date of funding of the PPP Loan (the "Maturity Date") and accrues interest at a rate of 1.00% per annum. Payments under the PPP Loan are deferred for the first sixteen months of its term. Commencing 60 days from the funding of the PPP Loan, but not more than sixteen months from the funding of the PPP Loan, Akoustis, Inc. is obligated to apply to the Lender for loan forgiveness for all or a portion of the PPP Loan. Such forgiveness will be determined, subject to limitations, based on the use of loan proceeds in accordance with the PPP, including for payroll costs and mortgage interest, rent and utility costs. If the SBA confirms full forgiveness of the unpaid balance of the PPP Loan, and reimburses the Lender for the total outstanding principal and interest due under the PPP Loan, then the loan will be deemed satisfied in full. If the SBA does not confirm full forgiveness of the PPP Loan, then the Lender will establish repayment terms of the outstanding principal and interest due under the PPP Loan. No assurance is provided that Akoustis, Inc. will obtain forgiveness of the PPP Loan in whole or in part. The Promissory Note contains customary events of default relating to, among other things, payment defaults and provisions of the Promissory Note.

Balance Sheet and Working Capital

June 30, 2020 Compared to June 30, 2019

As of June 30, 2020, the Company had current assets of $46.2 million made up primarily of cash on hand of $44.3 million. As of June 30, 2019, current assets were $31.7 million comprised primarily of cash on hand of $30.1 million. The $14.5 million increase is primarily due to an increase in cash on hand of $14.2.

Property, Plant and Equipment was $23.6 million as of June 30, 2020 as compared to a balance of $15.2 million as of the year ended June 30, 2019. The approximate $8.4 million year-over-year increase is primarily due to the purchase of equipment for the NY facility of $11.4 million primarily offset by depreciation of $3.0 million.

Total assets as of June 30, 2020 and June 30, 2019 were $71.4 million and $47.9 million, respectively.

Current liabilities as of June 30, 2020 were $6.1 million and increased year-over-year by $2.5 million which was primarily due to increases in fixed asset purchase commitments and employee compensation accruals.

Long-term liabilities totaled $23.8 million as of June 30, 2020, compared to $18.3 million for the prior year period. The increase of $5.5 million was primarily due to the changes in the convertible debt offerings of $3.4 million, addition of the PPP loan of $1.6 million and the addition of a lease liability of $0.5 million.

Stockholders' equity was $41.5 million as of June 30, 2020, compared to $26.0 million as of June 30, 2019. Additional paid-in-capital ("APIC") was $145.1 million as of June 30, 2020 and increased by $51.7 million. The year-over-year increase was primarily due to an increase from net proceeds of $42.9 million for the issuance of common stock during the year, common stock issued for services in the amount of $6.7 million, proceeds from exercise of warrants and options of $0.7 million and common stock issued in payment of convertible note interest of $1.0 million. The $15.5 million increase in stockholders' equity consisted of the $51.7 million increase in APIC reduced by the $36.1 million net loss recorded for the year ended June 30, 2020.

Cash Flow Analysis

Year Ended June 30, 2020 Compared to the Year Ended June 30, 2019

Operating activities used cash of $21.3 million during the year ended June 30, 2020 and $17.7 million for the 2019 comparative period. The $3.6 million year-over-year increase in cash used was attributable to higher operating expenses associated with the ramp up of development and commercialization activities (primarily R&D personnel and material costs), higher spend on G&A costs for support personnel and professional fees and increase in depreciation expense.

Investing activities used cash of $9.9 million for the year ended June 30, 2020 compared to $4.9 million for the comparative year ended June 30, 2019. The $5.0 million year-over-year decrease was primarily due to decreased spend on R&D equipment.

Financing activities provided cash of $45.5 million for the year ended June 30, 2020 versus $37.9 million for the 2019 comparative period. The $7.5 million increase was due to additional proceeds from common stock offset by lower proceeds from convertible notes issued during the period compared to the prior period.

Off-Balance Sheet Transactions

The Company did not engage in any "off-balance sheet arrangements" (as that term is defined in Item 303(a)(4)(ii) of Regulation S-K) as of June 30, 2020.

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

Not applicable

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of

Akoustis Technologies, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Akoustis Technologies, Inc. (the "Company") as of June 30, 2020 and 2019, the related consolidated statements of operations, changes in stockholders' equity and cash flows for each of the two years in the period ended June 30, 2020, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of June 30, 2020 and 2019, and the results of its operations and its cash flows for each of the two years in the period ended June 30, 2020, in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 3 to the consolidated financial statements, the Company has changed its method of accounting for leases in fiscal 2020 due to the adoption of the guidance in ASC Topic 842, Leases ("Topic 842").

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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

/s/ Marcum llp

Marcum llp

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

New York, NY
August 21, 2020

Akoustis Technologies, Inc.
Consolidated Balance Sheets
(In thousands, except per share data)

	June 30, 2020	June 30, 2019
Assets		
Assets:		
Cash and cash equivalents	$ 44,308	$ 30,054
Accounts receivable	351	285
Inventory	136	94
Other current assets	1,408	1,288
Total current assets	46,203	31,721
Property and equipment, net	23,605	15,178
Intangibles, net	544	388
Assets held for sale, net	21	300
Operating lease right-of-use asset, net	699	—
Restricted cash	100	100
Other assets	261	262
Total Assets	**$ 71,433**	**$ 47,949**
Liabilities and Stockholders' Equity		
Current Liabilities:		
Accounts payable and accrued expenses	$ 5,899	$ 3,211
Contingent real estate liability	—	446
Operating lease liability-current	231	—
Deferred revenue	—	5
Total current liabilities	6,130	3,662
Long-term Liabilities:		
Convertible notes payable, net	21,628	18,215
Operating lease liability-non current	472	—
Loans payable	1,591	—
Other long-term liabilities	117	117
Total long-term liabilities	23,808	18,332
Total Liabilities	29,938	21,994
Stockholders' Equity		
Preferred Stock, par value $0.001: 5,000,000 shares authorized; none issued and outstanding	—	—
Common stock, $0.001 par value; 100,000,000 shares authorized; 37,990,380 and 30,140,955 shares issued and outstanding at June 30, 2020 and June 30, 2019, respectively	38	30
Additional paid in capital	145,072	93,399
Accumulated deficit	(103,615)	(67,474)
Total Stockholders' Equity	41,495	25,955
Total Liabilities and Stockholders' Equity	**$ 71,433**	**$ 47,949**

See accompanying notes to the consolidated financial statements.

Akoustis Technologies, Inc.
Consolidated Statements of Operations
(In thousands, except per share data)

	For the Year Ended June 30, 2020	For the Year Ended June 30, 2019
Revenue	$ 1,790	$ 1,443
Cost of revenue	2,414	1,013
Gross profit	(624)	430
Operating expenses		
Research and development	20,523	19,075
General and administrative expenses	10,891	8,922
Total operating expenses	**31,414**	**27,997**
Loss from operations	**(32,038)**	**(27,567)**
Other (expense) income		
Interest (expense) income	(4,573)	(2,886)
Rental income	181	270
Change in fair value of contingent real estate liability	445	785
Change in fair value of derivative liabilities	(155)	150
Total Other (expense) income	**(4,102)**	**(1,681)**
Net loss	**$ (36,140)**	**$ (29,248)**
Net loss per common share - basic and diluted	$ (1.07)	$ (1.06)
Weighted average common shares outstanding - basic and diluted	33,698,502	27,512,426

See accompanying notes to the consolidated financial statements.

A koustis Technologies, Inc.
Consolidated Statements of Changes in Stockholders' Equity
For the Years Ended June 30, 2020 and 2019
(In thousands)

	Common Stock		Additional Paid In	Accumulated	Stockholders'
	Shares	Par Value	Capital	Deficit	Equity
Balance, June 30, 2018	22,203	$ 22	$ 52,074	$ (38,246)	$ 13,850
Cumulative-effect adjustment from adoption of ASC 606	—	—	—	20	20
Common stock issued for cash, net of issuance costs	7,363	8	28,652	—	28,660
Common stock issued for services	291	—	6,684	—	6,684
Common stock issued for exercise of options	29	—	200	—	200
Common stock issued for exercise of warrants	92	—	70	—	70
ESPP purchase	17	—	99	—	99
Intrinsic value of beneficial conversion feature	—	—	3,951	—	3,951
Vesting of restricted shares	—	—	648	—	648
Common stock issued in payment of note interest	167	—	1,021	—	1,021
Repurchase and retirement of common shares	(21)	—	—	—	—
Net loss	—	—	—	(29,248)	(29,248)
Balance, June 30, 2019	30,141	$ 30	$ 93,399	$ (67,474)	$ 25,955
Common stock issued for cash, net of issuance costs	6,913	7	42,913	—	42,920
Common stock issued for services	592	1	6,733	—	6,734
Common stock issued for exercise of options	37	—	203	—	203
Common stock issued for exercise of warrants	205	—	139	—	139
Common stock issued for equipment purchase	5	—	40	—	40
ESPP purchase	60	—	367	—	367
Vesting of restricted shares	—	—	303	—	303
Common stock issued in payment of note interest	138	—	975	—	975
Repurchase and retirement of common shares	(101)	—	—	—	—
Net loss	—	—	—	(36,141)	(36,141)
Balance, June 30, 2020	37,990	$ 38	$ 145,072	$ (103,615)	$ 41,495

See accompanying notes to the consolidated financial statements.

Akoustis Technologies, Inc.
Consolidated Statements of Cash Flows
(In thousands)

	For the Year Ended June 30, 2020	For the Year Ended June 30, 2019
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (36,140)	$ (29,248)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	3,080	2,497
Stock-based compensation	6,734	7,240
Non-cash interest payments	975	1,017
(Gain)/Loss on disposal of assets	14	(50)
Impairment on assets held for sale	—	—
Change in fair value of derivative liabilities	155	(150)
Amortization of debt discount	3,258	1,984
Amortization of operating lease right of use asset	108	—
Change in fair value of contingent real estate liability	(446)	(785)
Changes in operating assets and liabilities:		
Accounts receivable	(66)	(70)
Inventory	(42)	(36)
Other current asset	(120)	(462)
Other assets	—	(250)
Accounts payable and accrued expenses	1,293	710
Long-term lease liabilities	(103)	—
Deferred revenue	(5)	(65)
Net Cash Used in Operating Activities	(21,305)	(17,668)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Cash paid for machinery and equipment	(9,750)	(4,750)
Cash received from sale of fixed assets	60	33
Cash paid for intangibles	(201)	(174)
Net Cash Used in Investing Activities	(9,891)	(4,891)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from issuance of common stock	43,150	28,660
Proceeds from exercise of warrants	139	70
Proceeds from exercise of employee stock options	203	200
Proceeds from employee stock purchase plan	367	99
Proceeds received from notes, net	1,591	—
Proceeds received from convertible notes, net	—	8,867
Net Cash Provided by Financing Activities	45,450	37,896
Net Increase (Decrease) in Cash, Cash Equivalents and Restricted Cash	14,254	15,337
Cash, Cash Equivalents and Restricted Cash - Beginning of Period	30,154	14,817
Cash, Cash Equivalents and Restricted Cash - End of Period	$ 44,408	$ 30,154
SUPPLEMENTARY CASH FLOW INFORMATION:		
Cash Paid During the Period for:		
Income taxes	$ —	$ —
Interest	$ 650	$ 443
SUPPLEMENTARY DISCLOSURE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:		
Stock compensation payable	$ 303	$ 93
ASC 606 transition adjustment	—	20
Reclassification of fixed assets to assets held for sale, net	$ 49	$ 33
Vesting of restricted shares	$ —	$ 648
Common stock issued in payment of note interest	$ 975	$ 1,021
Asset purchase using common stock	40	—
Debt issuance costs included in accounts payable and accrued expenses	$ 230	$ (30)
Intrinsic value of beneficial conversion feature	$ —	$ 3,951

See accompanying notes to the consolidated financial statements.

AKOUSTIS TECHNOLOGIES, INC.
Notes to the Consolidated Financial Statements

Note 1. Organization

Akoustis Technologies, Inc. ("the Company") was incorporated on April 10, 2013, and effective December 15, 2016, the Company changed its state of incorporation to the State of Delaware. Through its subsidiary, Akoustis, Inc. (a Delaware corporation), the Company, headquartered in Huntersville, North Carolina, is focused on developing, designing, and manufacturing innovative radio frequency ("RF") filter products for the wireless industry, including for products such as smartphones and tablets, cellular infrastructure equipment, WiFi Customer Premise Equipment ("CPE"), and military and defense communication applications. Located between the device's antenna and its digital backend, the RF front-end ("RFFE") is the circuitry that performs the analog signal processing and contains components such as amplifiers, filters and switches. To construct the resonator devices that are the building blocks for its RF filters, the Company has developed a family of novel, high purity acoustic piezoelectric materials as well as a unique microelectromechanical system ("MEMS") wafer process, collectively referred to as XBAW™ technology. The Company leverages its integrated device manufacturing ("IDM") business model to develop and sell high performance RF filters using its XBAW^{TM} technology. Filters are critical in selecting and rejecting signals, and their performance enables differentiation in the modules defining the RFFE.

Note 2. Liquidity

At June 30, 2020, the Company had cash and cash equivalents of $44.4 million and working capital of $40.1 million. The Company has historically incurred recurring operating losses and has experienced net cash used in operating activities of $21.3 million for the year ended June 30, 2020 which raises substantial doubt about the Company's ability to continue as a going concern within one year after the issuance date.

As of August 17, 2020, the Company had $39.3 million of cash and cash equivalents, which the Company expects to be sufficient to fund its operations beyond the next twelve months from the date of filing of this Form 10-K. These funds will be used to fund the Company's operations, including capital expenditures, R&D, commercialization of our technology, development of our patent strategy and expansion of our patent portfolio, as well as to provide working capital and funds for other general corporate purposes. The Company has no commitments to obtain any additional funds, and there can be no assurance such funds will be available on acceptable terms or at all. If the Company is unable to obtain additional financing in a timely fashion and on acceptable terms, its financial condition and results of operations may be materially adversely affected and it may not be able to continue operations or execute its stated commercialization plan.

Note 3. Summary of significant accounting policies

Basis of presentation

The Company's consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") and the rules and regulations of the Securities and Exchange Commission ("SEC").

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiary, Akoustis, Inc. All significant intercompany accounts and transactions have been eliminated in consolidation.

Use of estimates and assumptions

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date(s) of the financial statements and the reported amounts of revenues and expenses during the reporting period(s).

Critical accounting estimates are estimates for which (a) the nature of the estimate is material due to the levels of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change and (b) the impact of the estimate on financial condition or operating performance is material. The Company's critical accounting estimates and assumptions affecting the financial statements were:

(1) *Fair value of long–lived assets:* Fair value is generally determined using the asset's expected future discounted cash flows or market value, if readily determinable. If long–lived assets are determined to be recoverable, but the newly determined remaining estimated useful lives are shorter than originally estimated, the net book values of the long–lived assets are depreciated over the newly determined remaining estimated useful lives. The Company considers the following to be some examples of important indicators that may trigger an impairment review: (i) significant under–performance or losses of assets relative to expected historical or projected future operating results; (ii) significant changes in the manner or use of assets or in the Company's overall strategy with respect to the manner or use of the acquired assets or changes in the Company's overall business strategy; (iii) significant negative industry or economic trends; (iv) increased competitive pressures; (v) a significant decline in the Company's stock price for a sustained period of time; and (vi) regulatory changes. The Company evaluates acquired assets for potential impairment indicators at least annually and more frequently upon the occurrence of such events.

(2) *Valuation allowance for deferred tax assets:* Management assumes that the realization of the Company's net deferred tax assets resulting from its net operating loss ("NOL") carry forwards for Federal income tax purposes that may be offset against future taxable income was not considered more likely than not and accordingly, the potential tax benefits of the NOL carry forwards are offset by a full valuation allowance. Management made this assumption based on (a) the Company's incurrence of losses, (b) general economic conditions, and (c) other factors.

(3) *Estimates and assumptions used in valuation of equity instruments:* Management estimates expected term of share options and similar instruments, expected volatility of the Company's common shares and the method used to estimate it, expected annual rate of quarterly dividends, and risk-free rate(s) to value share options and similar instruments.

(4) *Estimates and assumptions used in valuation of derivative liabilities:* Management utilizes a Monte Carlo simulation to estimate the fair value of derivative liabilities, and utilizes the with-and-without method, a form of the income approach model to compute the fair value of its embedded derivatives associated with its convertible note. These models include subjective assumptions that can materially affect the fair value estimates.

(5) *Estimates and assumptions used in valuation of the contingent real estate liability:* The fair value of the contingent liability was calculated by an independent third-party appraisal firm, utilizing a present value calculation based on the probability the Company sells the property triggering the contingent penalty which management estimates, and a discount rate. The discount rate was derived from a weighted average cost of capital, modified to include the effects of the bargain purchase price, and assumes a percentage chance of real estate sale.

These significant accounting estimates or assumptions bear the risk of change due to the fact that there are uncertainties attached to these estimates or assumptions, and certain estimates or assumptions are difficult to measure or value.

Management bases its estimates on various assumptions that are believed to be reasonable in relation to the financial statements taken as a whole under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from those estimates.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original maturity of three months or less when purchased to be cash equivalents. Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash deposits. The Company maintains its cash in institutions insured by the Federal Deposit Insurance Corporation ("FDIC"). At times, the Company's cash and cash equivalent balances may be uninsured or in amounts that exceed the FDIC insurance limits; as of June 30, 2020, approximately $44.1 million was uninsured.

Restricted Cash

Restricted cash at June 30, 2020 and June 30, 2019 represents a retained balance obligation included in a deposit account control agreement required by the Company's 6.5% Convertible Senior Secured Notes due 2023 issued in May 2018. The restriction on the cash will lapse in conjunction with the extinguishment of the debt.

Inventory

Inventory is stated at the lower of cost or net realizable value using the first-in, first-out (FIFO) valuation method.

Property and equipment, net

Property and equipment are stated at cost less accumulated depreciation. Depreciation is calculated using the straight–line method on the various asset classes over their estimated useful lives, which range from two to eleven years. Expenditures for major renewals and betterments that extend the useful lives of property and equipment are capitalized. Expenditures for maintenance and repairs, which do not extend the economic useful life of the related assets, are charged to operations as incurred. The Company records gains or losses on the disposal of assets as the difference between net book value of assets and cash received less costs to dispose of assets. Gains or losses on the disposal of assets, as well as impairment of assets held for sale are recorded in operating expenses.

Intangible assets, net

Intangible assets consist of patents, and trademarks. Applicable long–lived assets are amortized over the shorter of their estimated useful lives, the estimated period that the assets will generate revenue, or the statutory or contractual term in the case of patents. Estimates of useful lives and periods of expected revenue generation are reviewed for appropriateness and are based upon management's judgment. Patents are amortized on the straight-line method over their useful lives of 15 years.

Impairment of Long-Lived Assets

The Company assesses the recoverability of its long-lived assets, including property and equipment, when there are indications that the assets might be impaired. When evaluating assets for potential impairment, the Company compares the carrying value of the asset to its estimated undiscounted future cash flows. If an asset's carrying value exceeds such estimated undiscounted cash flows, the Company records an impairment charge for the difference between the carrying amount of the asset and its fair value.

Fair Value of Financial Instruments

The carrying amounts of cash and cash equivalents and accounts payable approximate fair value due to the short-term nature of these instruments.

The Company measures the fair value of financial assets and liabilities based on the guidance of ASC 820, "*Fair Value Measurements and Disclosures*," which defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements.

ASC 820 defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. ASC 820 also establishes a fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

Fair value measurements are categorized using a valuation hierarchy for disclosure of the inputs used to measure fair value, which prioritize the inputs into three broad levels:

Level 1 - Quoted prices are available in active markets for identical assets or liabilities as of the reporting date. Active markets are those in which transactions for the asset or liability occur in sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2 - Pricing inputs are other than quoted prices in active markets included in level 1, which are either directly or indirectly observable as of the reported date, and include those financial instruments that are valued using models or other valuation methodologies.

Level 3 - Pricing inputs include significant inputs that are generally less observable from objective sources. These inputs may be used with internally developed methodologies that result in management's best estimate of fair value.

Derivative Liability

The Company evaluates its options, warrants, convertible notes, or other contracts, if any, to determine if those contracts or embedded components of those contracts qualify as derivatives to be separately accounted for in accordance with paragraph 815-10-05-4 and Section 815-40-25 of the FASB Accounting Standards Codification. The result of this accounting treatment is that the fair value of the embedded derivative is marked-to-market each balance sheet date and recorded as either an asset or a liability. The change in fair value is recorded in the consolidated statement of operations as other income or expense. Upon conversion, exercise or cancellation of a derivative instrument, the instrument is marked to fair value at the date of conversion, exercise or cancellation and then the related fair value is reclassified to equity.

In circumstances where the embedded conversion option in a convertible instrument is required to be bifurcated and there are also other embedded derivative instruments in the convertible instrument that are required to be bifurcated, the bifurcated derivative instruments are accounted for as a single, compound derivative instrument.

The classification of derivative instruments, including whether such instruments should be recorded as liabilities or as equity, is re-assessed at the end of each reporting period. Equity instruments that are initially classified as equity that become subject to reclassification are reclassified to liability at the fair value of the instrument on the reclassification date. Derivative instrument liabilities will be classified in the balance sheet as current or non-current based on whether or not net-cash settlement of the derivative instrument is expected within 12 months of the balance sheet date.

The Company adopted Section 815-40-15 of the FASB Accounting Standards Codification ("Section 815-40-15") to determine whether an instrument (or an embedded feature) is indexed to the Company's own stock. Section 815-40-15 provides that an entity should use a two-step approach to evaluate whether an equity-linked financial instrument (or embedded feature) is indexed to its own stock, including evaluating the instrument's contingent exercise and settlement provisions.

The Company utilizes a Monte Carlo simulation to compute the fair value of the derivative liability and to mark to market the fair value of the derivative at each balance sheet date. The Company records the change in the fair value of the derivative as other income or expense in the consolidated statements of operations.

The Company utilizes the with-and-without method, a form of the income approach model to compute the fair value of its embedded derivatives associated with its convertible note. The fair value of the embedded derivatives represents the difference in the present value of anticipated cash flows assuming the feature is present as compared to a security without the same feature. The Company records the change in the fair value of the derivative as other income or expense in the consolidated statements of operations.

Research and Development

Research and development expenses are charged to operations as incurred.

Stock–based compensation

The Company recognizes compensation expense for all equity–based payments in accordance with ASC 718 "*Compensation – Stock Compensation*". Under fair value recognition provisions, the Company recognizes –based compensation net of actual forfeitures and recognizes compensation cost only for those shares expected to vest over the requisite service period of the award.

Restricted stock awards are granted at the discretion of the Company. These awards are restricted as to the transfer of ownership and generally vest over the requisite service periods, typically over a four-year period (generally vesting either ratably over the first four years or on a tier basis of 50% on the second anniversary of the effective date and 25% on the third and fourth anniversary dates). The fair value of a stock award is equal to the fair market value of a share of Company stock on the grant date.

The fair value of an option award is estimated on the date of grant using the Black–Scholes option valuation model. The Black–Scholes option valuation model requires the development of assumptions that are inputs into the model. These assumptions are the value of the underlying share, the expected stock volatility, the risk–free interest rate, the expected life of the option, and the dividend yield on the underlying stock. Expected volatility is calculated using the historical volatilities of the Company's common stock traded on the Nasdaq Capital Market. Risk–free interest rates are calculated based on continuously compounded risk–free rates for the appropriate term. The dividend yield is assumed to be zero as the Company has never paid or declared any cash dividends on its Common stock and does not intend to pay dividends on its Common stock in the foreseeable future. The Company accounts for the impact of forfeitures as they occur.

Determining the appropriate fair value model and calculating the fair value of equity–based payment awards requires the input of the subjective assumptions described above. The assumptions used in calculating the fair value of equity–based payment awards represent management's best estimates, which involve inherent uncertainties and the application of management's judgment. As a result, if factors change and the Company uses different assumptions, equity–based compensation could be materially different in the future. In addition, the Company is required to account for the impact of forfeitures as those forfeitures occur. If the Company's actual forfeitures are material, the equity–based compensation could be significantly different from what the Company has recorded in the current period.

Income taxes

In determining income for financial statement purposes, the Company must make certain estimates and judgments in the calculation of tax expense, the resultant tax liabilities, and in the recoverability of deferred tax assets that arise from temporary differences between the tax and financial statement recognition of revenue and expense.

As part of the financial process, the Company assesses on a tax jurisdictional basis the likelihood that the Company’s deferred tax assets can be recovered. If recovery is not more likely than not (a likelihood of less than 50 percent), the provision for taxes must be increased by recording a reserve in the form of a valuation allowance for the deferred tax assets that are estimated not to ultimately be recoverable. In this process, certain relevant criteria are evaluated including: the amount of income or loss in prior years, the existence of deferred tax liabilities that can be used to absorb deferred tax assets, future expected taxable income, and prudent and feasible tax planning strategies. Changes in taxable income, market conditions, U.S. or international tax laws, and other factors may change the Company’s judgment regarding whether the Company will be able to realize the deferred tax assets. These changes, if any, may require material adjustments to the net deferred tax assets and an accompanying reduction or increase in income tax expense which will result in a corresponding increase or decrease in net income in the period when such determinations are made.

As part of the Company’s financial process, the Company also assess the likelihood that the Company’s tax reporting positions will ultimately be sustained. To the extent it is determined it is more likely than not (a likelihood of more than 50 percent) that some portion or all of a tax reporting position will ultimately not be recognized and sustained, a provision for unrecognized tax benefit is provided by either reducing the applicable deferred tax asset or accruing an income tax liability. The Company’s judgment regarding the sustainability of the Company’s tax reporting positions may change in the future due to changes in U.S. or international tax laws and other factors. These changes, if any, may require material adjustments to the related deferred tax assets or accrued income tax liabilities and an accompanying reduction or increase in income tax expense which will result in a corresponding increase or decrease in net income in the period when such determinations are made. The Company recognizes interest and penalties related to uncertain tax positions in selling, general and administrative expenses.

Loss Per Share

Basic net loss per common share is computed by dividing net loss attributable to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted net loss per common share is determined using the weighted-average number of common shares outstanding during the period, adjusted for the dilutive effect of common stock equivalents. In periods when losses are reported, which is the case for the years ended June 30, 2020 and 2019 presented in these consolidated financial statements, the weighted-average number of common shares outstanding excludes common stock equivalents because their inclusion would be anti-dilutive.

The Company had the following common stock equivalents at June 30, 2020 and 2019:

	June 30, 2020	June 30, 2019
Convertible Notes	4,960,800	4,960,800
Options	2,294,415	2,127,317
Warrants	395,700	633,343
Total	7,650,915	7,721,460

Shares Outstanding

Shares outstanding include shares of restricted stock with respect to which restrictions have not lapsed. Shares of restricted stock are included in the calculation of weighted average shares outstanding. Restricted stock included in reportable shares outstanding were as follows as of June 30, 2020 and 2019.

	June 30, 2020	June 30, 2019
Shares of restricted stock included in reportable shares outstanding	109,250	265,000

Reclassification

Certain prior period amounts have been reclassified to conform to current period presentation. The reclassifications did not have an impact on net loss as previously reported

Recently Issued Accounting Pronouncements

Accounting Pronouncements Recently Adopted

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-02, "Leases (Topic 842)," with multiple amendments subsequently issued. The new guidance requires that lease arrangements be presented on the lessee's balance sheet by recording a right-of-use asset and a lease liability equal to the present value of the related future minimum lease payments. The Company adopted the standard in the first quarter of fiscal 2020, using the modified retrospective approach which permits lessees to recognize a cumulative-effect adjustment to the opening balance of accumulated deficit in the period of adoption. Upon adoption, the Company recorded a right-of-use asset of $0.7 million and a lease liability of $0.7 million.

The Company elected the transition package of practical expedients, under which the Company does not have to reassess (1) whether any expired or existing contracts are leases, or contain leases, (2) the lease classification for any expired or existing leases, and (3) initial direct costs for any existing leases. Further, the Company elected the practical expedient not to separate lease and non-lease components for substantially all its classes of leases and to account for the combined lease and non-lease components as a single lease component. In addition, the Company made an accounting policy election to exclude leases with an initial term of 12 months or less from the balance sheet. This standard did not have a material impact on the Condensed Consolidated Statement of Operations or Condensed Consolidated Statement of Cash Flows. See Note 12 for further disclosures resulting from the adoption of this new standard.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation – Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. Under the new standard, companies are no longer required to value non-employee awards differently from employee awards. Companies value all equity classified awards on their grant date under ASC718 and forgo revaluing the award after the grant date. ASU 2018-07 is effective for annual reporting periods beginning after December 15, 2018, including interim reporting periods within that reporting period. The Company adopted the standard during the first quarter of fiscal year 2020. This standard did not have a material impact on the Company's condensed consolidated financial statements. Approximately $0.3 million of accrued expenses associated with share-based compensation was reclassified to equity.

In May 2017, the FASB issued ASU 2017-09, "*Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting,*" which provides guidance about which changes to the terms or conditions of a stock-based payment award require an entity to apply modification accounting in Topic 718. The Company adopted the standard during the first quarter of fiscal year 2020 and there was no material impact on its condensed consolidated financial statements.

Note 4. Revenue Recognition from Contracts with Customers

Effective as of July 1, 2018, the Company adopted Accounting Standards Codification ("ASC") Topic 606, "Revenue from Contracts with Customers" ("ASC 606"). The core principle of ASC 606 requires that an entity recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. ASC 606 defines a five-step process to achieve this core principle and, in doing so, it is possible more judgment and estimates may be required within the revenue recognition process than required under existing U.S. GAAP including identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation.

To achieve this core principle, the Company applies the following five steps:

Step l - Identify the Contract with the Customer - A contract exists when (a) the parties to the contract have approved the contract and are committed to perform their respective obligations, (b) the entity can identify each party's rights regarding the goods or services to be transferred, (c) the entity can identify the payment terms for the goods or services to be transferred, (d) the contract has commercial substance and (e) it is probable that the entity will collect substantially all of the consideration to which it will be entitled in exchange for the goods or services that will be transferred to the customer.

Step 2 - Identify Performance Obligations in the Contract - Upon execution of a contract, the Company identifies as performance obligations each promise to transfer to the customer either (a) goods or services that are distinct or (b) a series of distinct goods or services that are substantially the same and have the same pattern of transfer to the customer. To the extent a contract includes multiple promised goods or services, the Company must apply judgement to determine whether the goods or services are capable of being distinct within the context of the contract. If these criteria are not met, the goods or services are accounted for as a combined performance obligation. The Company considers the performance obligation in a product sale to be title transfer of the specified product to the customer. The transfer of title occurs according to the purchase order (contract) specification. The Company considers performance obligations related to foundry fabrication services to be title transfer of the specified product or prototype to the customer. The transfer of title occurs according to the purchase order (contract) specification. In the absence of title transfer language, transfer occurs at the time of shipment.

Step 3 - Determine the Transaction Price - The transaction price is determined based on the consideration to which the Company will be entitled in exchange for transferring products or services to the customer. Generally, all contracts include fixed consideration. If a contract did include variable consideration, the Company would determine the amount of variable consideration that should be included in the transaction price based on the expected value method. Variable consideration would be included in the transaction price, if in the Company's judgement, it is probable that a significant future reversal of cumulative revenue under the contract would not occur.

Step 4 - Allocate the Transaction Price - After the transaction price has been determined, the next step is to allocate the transaction price to each performance obligation in the contract. If the contract only has one performance obligation, the entire transaction price will be applied to that obligation. If the contract has multiple performance obligations, the transaction price is allocated to the performance obligations based on the relative standalone selling price (SSP) at contract inception.

Step 5 - Satisfaction of the Performance Obligations (and Recognition of Revenue) - When an asset is transferred, and the customer obtains control of the asset (or the services are rendered), the Company recognizes revenue. At contract inception, the Company determines if each performance obligation is satisfied at a point in time or over time. The Company will recognize sales of its product in the period that title of the product is transferred to the customer. The Company will evaluate foundry fabrication services contracts on a case by case basis as they vary with regards to enforceable right and alternative use. If an unrestricted, enforceable right and no alternative use exists, the Company will recognize revenue over time utilizing the input method which the Company considers to be the best method of measuring progress toward complete satisfaction of the performance obligation. However, if either of these does not exist, the Company will recognize revenue at a point in time based on title transfer of the final prototype or specified product.

Disaggregation of Revenue

The Company's primary revenue streams include foundry fabrication services and product sales.

Foundry Fabrication Services

Foundry fabrication services revenue includes microelectromechanical systems ("MEMS") foundry services and Non-Recurring Engineering ("NRE"). Under these contracts, products are delivered to the customer at the completion of the service which represents satisfaction of the performance obligation as well as transfer of title. Depending on language with regards to enforceable right to payment for performance completed to date, related revenue will either be recognized over time or at a point in time.

Product Sales

Product sales revenue consists of sales of RF filters and amps, which are sold with contract terms stating that title passes, and the customer takes control, at the time of shipment. Revenue is then recognized when the devices are shipped, and the performance obligation has been satisfied. If devices are sold under contract terms that specify that the customer does not take ownership until the goods are received, revenue is recognized when the customer receives the goods.

The following table summarizes the revenues of the Company's reportable segments for the year ended June 30, 2020, (in thousands):

	Foundry Fabrication Services Revenue	Product Sales Revenue	Total Revenue with Customers
MEMS	$ 265	—	$ 265
NRE - RF Filters	726	—	726
Filters/Amps	—	799	799
Total	$ 991	$ 799	$ 1,790

The following table summarizes the revenues of the Company's reportable segments for the year ended June 30, 2019, (in thousands):

	Foundry Fabrication Services Revenue	Product Sales Revenue	Total Revenue with Customers
MEMS	$ 540	—	$ 540
NRE - RF Filters	518	—	518
Filters/Amps	—	276	276
Total	$ 1,058	$ 276	$ 1,334

Performance Obligations

The Company has determined that contracts for product sales revenue and foundry fabrication services revenue involve one performance obligation, which is delivery of the final product.

Contract Balances

The Company records a receivable when the title for goods has transferred. Generally, all sales are contract sales (with either an underlying contract or purchase order), resulting in all receivables being contract receivables. When invoicing occurs prior to revenue recognition a contract liability is recorded (as deferred revenue on the Consolidated Balance Sheet).

The following table summarizes the changes in the opening and closing balances of the Company's contract asset and liability for the year ended June 30, 2020 and 2019 (in thousands):

	Contract Assets	Contract Liabilities
Balance, June 30, 2019	$ 140	$ 5
Closing, June 30, 2020	125	—
Increase/(Decrease)	(15)	(5)
Balance, June 30, 2018	$ —	$ 53
Closing, June 30, 2019	140	5
Increase/(Decrease)	140	(48)

The amount of revenue recognized in the year ended June 30, 2020 that was included in the opening contract liability balance was $5 thousand, which related to filter sales. The amount of revenue recognized in the year ended June 30, 2019 that was included in the opening contract liability balance consisted of $28 thousand that related to non-recurring engineering sales and $25 thousand that related to MEMS business.

Contract assets are recorded when revenue recognized exceeds the amount invoiced. The difference between the opening and closing balances of the Company's contract assets and contract liabilities primarily results from the timing difference between the Company's performance and the customer's payment. The amount of contract assets invoiced in the year ended June 30, 2020 that was included in the opening contract asset balance was $140 thousand, which primarily related to MEMS business.

Backlog of Remaining Customer Performance Obligations

Revenue expected to be recognized and recorded as sales during the next fiscal year from the backlog of performance obligations that are unsatisfied (or partially unsatisfied) was $0.7 million at June 30, 2020.

Grant Revenue

From time to time the Company applies for grants from various government bodies (state & federal), such as the National Science Foundation ("NSF") or the Department of Defense (DoD), to support research and development. In addition, the Company may be eligible for "matching awards" from state boards to provide additional funds to the Company to supplement the funds awarded under the federal grant program. The Company records grant revenue as a part of revenue from operations given that grant revenue is viewed as an ongoing function of its intended operations. The revenue from grants is not viewed as "incidental" or "peripheral" which would result in the presentation of grant revenue as "Other income". The Company recognizes non-refundable grant revenue when the performance obligations have been met, application has been submitted and approval is reasonably assured.

Note 5. Property and equipment

Property and equipment consisted of the following as of June 30, 2020 and 2019 (in thousands):

	June 30, 2020	June 30, 2019	Estimated Useful Life
Land	$ 1,000	$ 1,000	n/a
Building	3,000	3,000	11 years
Equipment	24,746	13,611	2-10 years
Leasehold Improvements	964	949	*
Software	294	161	3 years
Furniture & Fixtures	11	11	5 years
Computer Equipment	267	203	3 years
Total	30,282	18,935	
Less: Accumulated depreciation	(6,677)	(3,757)	
Total	**$ 23,605**	**$ 15,178**	

(*) Leasehold improvements which are amortized on a straight-line basis over the term of the lease or the estimated useful lives, whichever is shorter.

The Company recorded depreciation expense of $2.9 million and $2.4 million for the years ended June 30, 2020 and 2019, respectively.

As of June 30, 2020, equipment with a net book value totaling $5.6 million had not been placed in service and therefore was not depreciated during the period. As of June 30, 2019, fixed assets with a net book value totaling $2.6 million had not been placed in service and therefore was not depreciated during the period.

Note 6. Accounts payable and accrued expenses

Accounts payable and accrued expenses consisted of the following at June 30, 2020 and June 30, 2019 (in thousands):

	June 30, 2020	June 30, 2019
Accounts payable	$ 2,135	$ 248
Accrued salaries and benefits	2,478	2,163
Accrued professional fees	193	315
Accrued utilities	138	193
Accrued interest	137	137
Accrued good received not invoiced	396	69
Other accrued expenses	422	86
Totals	**$ 5,899**	**$ 3,211**

Note 7. Derivative Liabilities

The table below provides a summary of the changes in fair value, including net transfers in and/or out, of all financial assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during the year ended June 30, 2020 and 2019 (in thousands):

	Fair Value Measurement Using Level 3 Inputs Total
Balance, June 30, 2018	$ 1,105
Change in fair value of derivative liabilities (included in other (expense) income)	(150)
Balance, June 30, 2019	$ 955
Change in fair value of derivative liabilities (included in other (expense) income)	155
Balance, June 30, 2020 (see footnote 8)	**$ 1,110**

The fair value of the derivative features of the convertible note at the balance sheet dates were calculated using the with-and-without method, a form of the income approach, valued with the following weighted average assumptions:

	June 30, 2020	June 30, 2019
Remaining term (years)	2.92-3.42	3.92
Expected volatility	70%	49%
Risk free interest rate	0.18%-0.20%	1.73%
Dividend yield	0.00	0.00%

Risk-free interest rate: The Company uses the risk-free interest rate of a U.S. Treasury Bill with a similar term on the date of the issuance.

Dividend yield: The Company uses a 0% expected dividend yield as the Company has not paid dividends to date and does not anticipate declaring dividends in the near future.

Volatility: The Company estimated the expected volatility of the stock price based on a blend of the Company's own historic volatility and the corresponding volatility of the Company's peer group stock price for a period consistent with the convertible notes' expected term.

Remaining term: The Company's remaining term is based on the remaining contractual term of the convertible notes.

Note 8. Convertible Notes

The following table summarizes convertible debt as of June 30, 2020 (in thousands):

	Maturity Date	State Interest Rate	Conversion Price	Face Value	Remaining Debt (Discount)	Fair Value of Embedded Conversion Option	Carrying Value
Long Term convertible notes payable							
6.5% convertible senior secured notes	5/31/2023	6.50%	$ 5.00	$ 15,000	$ (3,918)	$ 894	$ 11,976
6.5% convertible senior notes	11/30/2023	6.50%	$ 5.10	$ 10,000	$ (564)	$ 216	$ 9,652
Ending Balance as of June 30, 2020				**$ 25,000**	**$ (4,482)**	**$ 1,110**	**$ 21,628**

The following table summarizes convertible debt as of June 30, 2019 (in thousands):

	Maturity Date	State Interest Rate	Conversion Price	Face Value	Remaining Debt (Discount)	Fair Value of Embedded Conversion Option	Carrying Value
Long Term convertible notes payable							
6.5% convertible senior secured notes	5/31/2023	6.50%	$ 5.00	$ 15,000	$ (6,825)	$ 955	$ 9,130
6.5% convertible senior notes	11/30/2023	6.50%	$ 5.10	$ 10,000	$ (915)	$ —	$ 9,085
Ending Balance as of June 30, 2019				**$ 25,000**	**$ (7,740)**	**$ 955**	**$ 18,215**

May 2018 Notes

On May 14, 2018 the Company completed the offering of $15.0 million principal amount of the Company's 6.5% Convertible Senior Secured Notes due 2023. The net proceeds of the offering after payment of offering costs were approximately $13.1 million. The notes will mature on May 31, 2023, unless earlier converted, redeemed or repurchased. Interest on the notes accrues at the rate of 6.5% per year and is payable at the Company's option quarterly in cash and/or freely tradable shares of the Company's common stock, subject to certain limitations. The notes may be converted into common stock at the option of the holder at any time prior to maturity at an initial conversion price of $6.55 per share, subject to adjustment under certain circumstances. If the holder elects to convert the notes at any time on or after the date that is one year after the last date of original issuance of the notes and prior to May 31, 2021, the holder will also receive a make-whole payment equal to the remaining scheduled interest payments that would have been made on the notes converted had such notes remained outstanding through May 31, 2021 (the "Put Date"). At the Company's option, make-whole payments may be paid in cash and/or freely tradable shares of the Company's common stock.

The holders of the notes have a one-time right, exercisable prior to the Put Date in the manner described in the indenture relating to the notes, to require the Company to repurchase for cash all (but not less than all) of such holder's notes on the Put Date at a purchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to, and including, the Put Date.

As a result of the Company issuing new shares of common stock for a price to the public of $4.25 per share in October 2018, the Company adjusted the conversion price of the convertible notes from $6.55 per share to $5.00 per share pursuant to the terms of the Indenture.

October 2018 Notes

On October 23, 2018, the Company completed the offering of $10.0 million principal amount of the Company's 6.5% Convertible Senior Notes due 2023. The notes are unsecured and rank pari passu with the Company's outstanding unsubordinated liabilities, including its 6.5% Convertible Senior Secured Notes due 2023 issued in May 2018. The net proceeds of the offering after payment of offering costs were approximately $8.9 million. The notes will mature on November 30, 2023, unless earlier converted, redeemed or repurchased. Interest on the notes accrues at the rate of 6.5% per year and is payable in cash on each February 28, May 31, August 31 and November 30, beginning February 28, 2019. The notes are convertible into common stock at the option of the holder at any time prior to maturity at an initial conversion price of $5.10 per share, subject to adjustment under certain circumstances.

The Company may redeem the notes, at its option and in whole or in part, at a redemption price equal to 100% of the principal amount of Notes plus accrued and unpaid interest on such principal up to the redemption date, as follows: (1) on or after November 30, 2019 until November 29, 2020, if the closing sale price per share of the Common Stock exceeds 175% of the then-effective conversion price of the notes for each of 20 of any 30 consecutive trading days immediately preceding the optional redemption notice delivered by the Company; (2) on or after November 30, 2020 until November 29, 2021, if the closing sale price per share of the Common Stock exceeds 150% of the then-effective conversion price of the notes for each of 20 of any 30 consecutive trading days immediately preceding the optional redemption notice delivered by the Company and (3) on or after November 30, 2021, if the closing sale price per share of the Common Stock exceeds 125% of the then-effective conversion price of the notes for each of 20 of any 30 consecutive trading days immediately preceding the optional redemption notice delivered by the Company. Upon redemption, each noteholder will receive an interest make-whole payment equal to the remaining scheduled interest payments that would have been made on the redeemed notes had the notes remained outstanding through the Maturity Date, which will be paid in cash; provided, however, that so long as the Make-Whole VWAP Price (as defined below) is not less than $5.01 per share (as appropriately adjusted for any stock split, reverse stock split, stock dividend or other reclassification or combination of our common stock occurring after the date of issuance of the notes offered hereby), the Company will have the option to pay interest make-whole payments in freely tradable shares of Common Stock valued at the product of (x) 95% and (y) the volume weighted average price of Common Stock for the ten trading days ending on and including the trading day immediately preceding the redemption date (such product, the "Make-Whole VWAP Price").

Each holder of notes will have a one-time right to require the Company to repurchase on November 30, 2021 for cash all (but not less than all) of the notes of such holder at a purchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest on such principal, if any, up to such repurchase date. In addition, if a "fundamental change" (as defined in the indenture) occurs prior to the maturity date, subject to certain conditions, holders of the notes will have the right to require the Company to repurchase for cash all of the notes, or any portion thereof that is equal to $1,000 or an integral multiple of $1,000, at a purchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest on such principal, if any, up to such repurchase date.

The Company analyzed the components of the convertible notes for embedded derivatives and the application of the corresponding accounting treatment. This analysis determined that certain features of the notes represented derivatives that require bifurcation from the host contract. The fair value of these components of $0 was recorded as a debt discount and will be adjusted to fair value at the end of each future reporting period.

On April 17, 2020, the Company entered into (i) a Second Supplemental Indenture to the Indenture dated May 14, 2018 (the "May 2018 Supplemental Indenture"), by and among the Company, Akoustis, Inc., a wholly-owned subsidiary of the Company, and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent (the "Trustee"), and (ii) a Second Supplemental Indenture to the Indenture dated October 23, 2018 (the "October 2018 Supplemental Indenture" and, together with the May 2018 Supplemental Indenture, the "Supplemental Indentures"), by and between the Company and the Trustee. Among other things, the Supplemental Indentures permit the incurrence of the indebtedness made available through the Coronavirus Aid, Relief, and Economic Security Act, as amended from time to time and including all regulations thereunder.

Note 9. Loans Payable

Paycheck Protection Program Loan

On May 20, 2020, Akoustis, Inc., the operating subsidiary of the Company, issued a promissory note (the "Promissory Note") in favor of Bank of America, NA (the "Lender") that provides for a loan in the principal amount of $1.6 million (the "PPP Loan") pursuant to the Paycheck Protection Program (the "PPP") under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"), which is administered by the United States Small Business Administration (the "SBA"). The PPP Loan is scheduled to mature two years from the date of funding of the PPP Loan (the "Maturity Date") and accrues interest at a rate of 1.00% per annum. Payments under the PPP Loan are deferred for the first sixteen months of its term. Commencing 60 days from the funding of the PPP Loan, but not more than sixteen months from the funding of the PPP Loan, Akoustis, Inc. is obligated to apply to the Lender for loan forgiveness for all or a portion of the PPP Loan. Such forgiveness will be determined, subject to limitations, based on the use of loan proceeds in accordance with the PPP, including for payroll costs and mortgage interest, rent and utility costs. If the SBA confirms full forgiveness of the unpaid balance of the PPP Loan, and reimburses the Lender for the total outstanding principal and interest due under the PPP Loan, then the loan will be deemed satisfied in full. If the SBA does not confirm full forgiveness of the PPP Loan, then the Lender will establish repayment terms of the outstanding principal and interest due under the PPP Loan. No assurance is provided that Akoustis, Inc. will obtain forgiveness of the PPP Loan in whole or in part. The Promissory Note contains customary events of default relating to, among other things, payment defaults and provisions of the Promissory Note. The Company treated the PPP Loan as debt and is included as a long-term liability on the balance sheet.

Note 10. Concentrations

Vendors

Vendor concentration as a percentage of purchases for the year ended June 30, 2020 and 2019 are as follows:

	Year Ended 06/30/2020	Year Ended 06/30/2019
Vendor 1	12%	—

Customers

Customer concentration as a percentage of revenue for the year ended June 30, 2020 and 2019 are as follows:

	Year Ended 06/30/2020	Year Ended 06/30/2019
Customer 1	19%	12%
Customer 2	19%	—
Customer 3	14%	31%
Customer 4	11%	—
Customer 5	10%	—

Note 11. Stockholders' Equity

Equity Issuances

During the year ended June 30, 2020, the Company sold a total of 5,520,000 shares of its common stock at a price to the public of $6.25 per share for aggregate gross proceeds of $34.5 million before deducting the underwriting discount and offering expenses payable by the Company of approximately $2.3 million.

Additionally, on May, 8, 2020 the Company entered into an ATM Equity Offering SM Sales Agreement with BofA Securities, Inc. and Piper & Sandler & Co. pursuant to which the Company may sell from time to time shares of its common stock having an aggregate offering price of up to $50,000,000 (the "ATM Program"). During the year ended June 30, 2020, the Company sold a total of 1,392,661 shares of its common stock at a price to the public of an average of $8.02 per share through the ATM Program for aggregate gross proceeds of approximately $11.2 million, before deducting compensation paid to the sales agents of approximately $0.2 million and other offering expenses of approximately $0.2 million.

During the year ended June 30, 2019, the Company sold a total of 7,250,000 shares of its common stock at a price to the public of $4.25 per share for aggregate gross proceeds of $30.8 million before deducting the underwriting discount and offering expenses payable by the Company of approximately $2.1 million.

During the year ended June 30, 2019, the Company also issued 113,592 shares of its common stock to investors in the Company's private placement that closed in May 2017. These issuances were made pursuant to the price-protection provisions granted to such investors in their subscription agreements.

Equity incentive plans

On May 22, 2015, the Board of Directors adopted, and on the same date the stockholders approved, the 2015 Equity Incentive Plan (the "2015 Plan"). The 2015 Plan authorized the grant to participants of nonqualified stock options, incentive stock options, restricted stock awards, restricted stock units, performance grants. Effective December 15, 2016, equity awards were granted under the Company's 2016 Stock Incentive Plan (the "2016 Plan"), which was approved by the Company's stockholders on the same date. Effective November 1, 2018, equity awards are granted under the Company's 2018 Stock Incentive Plan (as amended, the "2018 Plan"), which was approved by the Company's stockholders on the same date. The 2018 Plan initially reserved a total of 3,000,000 shares of common stock for issuance thereunder. On September 24, 2019, the Company's stockholders approved an amendment to the 2018 Plan increasing the number of shares reserved for issuance thereunder to 6,000,000. As of June 30, 2020, 3,758,226 shares remained available for future grants under the 2018 Plan. No additional shares will be issued under the 2015 Plan or the 2016 Plan. The Company settles awards issued under all plans with newly issued common shares.

In addition, the number of shares of our common stock subject to the 2015 Plan, 2016 Plan and 2018 Plan, any number of shares subject to any numerical limit in the Plans, and the number of shares and terms of any incentive awards thereunder would be adjusted in the event of any change in our outstanding common stock by reason of any stock dividend, spin-off, split-up, stock split, reverse stock split, recapitalization, reclassification, merger, consolidation, liquidation, business combination or exchange of shares or similar transaction.

Options granted under the 2015 Plan, 2016 Plan and 2018 Plan vest as determined by the Company's board of directors and expire over varying terms, but not more than ten years from the date of grant. In the case of an Incentive Stock Option that is granted to a 10% shareholder on the date of grant, such Option shall not be exercisable after the expiration of five years from the date of grant.

The fair values of the Company's options were estimated at the dates of grant using a Black-Scholes option pricing model with the following weighted average assumptions:

	June 30, 2020	June 30, 2019
Exercise price	\$4.71 – \$8.15	\$3.78 – \$8.18
Expected term (years)	4.75 – 5.00	4.00 – 7.00
Risk-free interest rate	0.32 – 1.74%	1.89 – 2.97%
Volatility	65 – 69%	66 – 69%
Dividend yield	0%	0%
Weighted Average Grant Date Fair Value of Options granted during the period	\$4.31	\$2.88

Expected term: The Company's expected term is based on the period the options are expected to remain outstanding. The Company estimated this amount utilizing the "Simplified Method" in that the Company does not have sufficient historical experience to provide a reasonable basis to estimate an expected term.

Risk-free interest rate: The Company uses the risk-free interest rate of a U.S. Treasury Note with a similar term on the date of the grant.

Volatility: The Company calculates the expected volatility of the stock price using the historical volatilities of the Company's common stock traded on the Nasdaq Capital Market.

Dividend yield: The Company uses a 0% expected dividend yield as the Company has not paid dividends to date and does not anticipate declaring dividends in the near future.

The following is a summary of the option activity:

	Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding – June 30, 2019	2,127,317	5.57		
Granted	332,500	7.79		
Exercised	(38,250)	5.50		
Forfeited/Cancelled	(127,152)	6.51		
Outstanding – June 30, 2020	2,294,415	5.84	5.12	5,625
Exercisable – June 30, 2020	1,093,040	5.24	4.78	3,339

The total intrinsic value of options exercised during the fiscal years ended June 30, 2020 and June 30, 2019 was $104 thousand and $20 thousand, respectively.

As of June 30, 2020, the Company has $2.1 million in unrecognized stock-based compensation expense attributable to the outstanding options, which will be amortized over a period of two years.

Unrecognized stock-based compensation expense and weighted-average years to be recognized are as follows (in thousands):

	As of June 30, 2020	
	Unrecognized stock-based compensation	Weighted-average years to be recognized
Options	$ 2,143	2.06
Restricted stock awards/units	$ 6,502	2.07

For the years ended June 30, 2020 and 2019, the Company recorded $6.7 million and $7.2 million, respectively, in stock-based compensation which is reflected in total operating expenses in the consolidated statements of operations as follows (in thousands):

	2020	2019
Research and Development	$ 3,454	$ 4,182
General and Administrative	3,280	3,058
Total	$ 6,734	$ 7,240

Restricted Stock Units and Restricted Stock Awards

A summary of unvested restricted stock awards ("RSAs") and restricted stock unit awards ("RSUs") outstanding as of June 30, 2020 and changes during the year ended is as follows:

	Number of RSAs/RSUs	Weighted Average Fair Value per Share/Unit
Outstanding - June 30, 2019	1,342,382	$ 6.01
Granted	975,561	7.70
Vested	(554,007)	5.63
Forfeited/Cancelled/Repurchased	(74,100)	6.94
Outstanding – June 30, 2020	1,689,836	7.07

The weighted average grant date fair value per share for awards granted during the fiscal years ended June 30, 2020 and June 30, 2019 was $7.70 and $6.21, respectively. The total fair value of restricted awards that vested during the fiscal years ended June 30, 2020 and June 30, 2019 was $4.0 million and $4.9 million, respectively.

During the years ended June 30, 2020 and 2019, the Company recorded stock-based compensation expense of $4.7 million and $4.2 million, respectively related to the RSAs and RSUs that have been issued to date.

As of June 30, 2020, the Company had approximately $6.5 million in unrecognized stock-based compensation expense related to the unvested shares.

Performance Awards

In September 2018, the Company granted 119,500 performance-based restricted stock units ("PBRSU") to employees with a grant date fair value per share of $8.30. The PBRSU awards contain performance and service conditions which must be satisfied for an employee to earn the award. The performance condition is based primarily on the achievement of certain performance objectives. Once earned, the PBRSU awards vest 100% on the first anniversary of the grant date. The Company recognizes compensation expense for PBRSU awards using a graded vesting model, based on the probability of the performance condition being met. During the year ended June 30, 2019, all 119,500 of the PBRSU awards were earned.

A summary of unvested PBRSU's outstanding as of June 30, 2020 and changes during the year ended is as follows:

	Number of PBRSUs	Weighted Average Fair Value per Share/Unit
Outstanding - June 30, 2019	119,500	$ 8.30
Granted	—	—
Vested	(119,500)	8.30
Forfeited/Cancelled/Repurchased	—	—
Outstanding – June 30, 2020	—	—

The weighted average grant date fair value per share for awards granted during the fiscal years ended June 30, 2020 and June 30, 2019 was $0.00 and $8.30, respectively. The total fair value of restricted awards that vested during the fiscal years ended June 30, 2020 and June 30, 2019 was $0.8 million and $0.1 million, respectively.

During the years ended June 30, 2020 and 2019, the Company recorded stock-based compensation expense of $0.18 million and $0.63 million, respectively related to the PBRSU awards that have been issued to date.

As of June 30, 2020, the Company had $0 in unrecognized stock-based compensation expense related to the unvested PBRSU awards.

Employee Stock Purchase Plan

Effective November 1, 2018, the Company adopted the Akoustis Technologies, Inc. Employee Stock Purchase Plan 2018 (the "ESPP"), which was approved by the stockholders on the same date, The ESPP is intended to qualify as an "employee stock purchase plan" under Section 423 of the Code. All regular full-time employees of the Company (including officers) and all other employees who meet the eligibility requirements of the plan may participate in the ESPP. The ESPP provides eligible employees an opportunity to acquire the Company's common stock at 85.0% of the lower of the closing price per share of the Company's common stock on the first or last day of each six-month purchase period. At June 30, 2020, 0.42 million shares were available for future issuance under this plan. The Company makes no cash contributions to the ESPP but bears the expenses of its administration. The Company issued 0.06 million, and 0.02 million shares under the ESPP in fiscal years 2020 and 2019, respectively. The Company settles awards issued under the ESPP with newly issued common shares.

For the years ended June 30, 2020 and 2019, the Company recorded $0.14 million and $0.04 million, respectively, in stock-based compensation related to grants of ESPP shares.

Note 12. Commitments and contingencies

Leases

The Company leases office space and office equipment in Huntersville, NC as well as equipment in Canandaigua, NY. On January 7, 2020, the Company entered into an amended lease agreement with the current lessor in order to extend the lease term and increase office space at our Huntersville, NC corporate office. The amended lease expands our space to 22,000 square feet and extends the term to February 2023. This resulted in a remeasurement of the previous right of use asset and liability, which resulted in an increase of approximately $0.2 million.

Following adoption of ASC 842, lease expense excludes capital area maintenance and property taxes.

The components of lease expense were as follows (in thousands):

	Year Ended June 30, 2020	Year Ended June 30, 2019
Operating Lease Expense	$ 219	$ 199

Supplemental balance sheet information related to leases was as follows (in thousands):

	Classification on the Condensed Consolidated Balance Sheet	June 30, 2020
Assets		
Operating lease assets	Other non-current assets	$ 699
Liabilities		
Other current liabilities	Current liabilities	231
Operating lease liabilities	Other non-current liabilities	472
Weighted Average Remaining Lease Term:		
Operating leases		2.75 Years
Weighted Average Discount Rate:		
Operating leases		12.47%

The following table outlines the minimum future lease payments for the next five years and thereafter, (in thousands):

For the year ending June 30,	
2021	$ 305
2022	312
2023	204
2024	7
2025	—
Thereafter	—
Total lease payments (Undiscounted cash flows)	828
Less imputed interest	(125)
Total	$ 703

Ontario County Industrial Development Authority Agreement

On February 27, 2018, the Company entered into a Lease and Project Agreement (the "Lease and Project Agreement") and a Company Lease Agreement (the "Company Lease Agreement" and together with the Lease and Project Agreement, the "Agreements"), each dated as of February 1, 2018, with the Ontario County Industrial Development Agency, a public benefit corporation of the State of New York (the "OCIDA"). Pursuant to the Agreements, the Company will lease for $1.00 annually to the OCIDA an approximately 9.995 acre parcel of land in Canandaigua, New York, together with the improvements thereon (including the Company's New York fabrication facility), and transfer title to certain related equipment and personal property to the OCIDA (collectively, the "Facility"). The OCIDA will lease the Facility back to the Company for annual rent payments specified in the Lease and Project Agreement for the Company's primary use as research and development, manufacturing, warehouse and professional office space in its business, and to be subleased, in part, by the Company to various existing tenants. The Company estimates substantial tax savings during the term of the Agreements, which expire on December 31, 2028. In addition, subject to the terms of the Lease and Project Agreement, certain purchases and leases of eligible items will be exempt from the imposition of sales and use taxes. Subject to the terms of the Lease and Project Agreement, the OCIDA has also granted to the Company an exemption from certain mortgage recording taxes for one or more mortgages securing an aggregate principal amount not to exceed $12.0 million, or such greater amount as approved by the OCIDA in its sole and absolute discretion. The benefits provided to the Company pursuant to the terms of the Lease and Project Agreement are subject to claw back over the life of the Agreements upon certain recapture events, including certain events of default.

Real Estate Contingent Liability

On March 23, 2017, the Company entered into an Asset Purchase Agreement and a Real Property Purchase Agreement with The Research Foundation for the State University of New York ("RF-SUNY") and Fuller Road Management Corporation ("FRMC"), an affiliate of RF-SUNY (collectively, "Sellers"), respectively, to acquire certain specified assets, including STC-MEMS, a semiconductor wafer-manufacturing and MEMS operation with associated wafer-manufacturing tools, and the associated real estate and improvements located in Canandaigua, NY used in the operation of STC-MEMS (the assets and real estate and improvements referred to together herein as the "STC-MEMS Business").

In connection with the acquisition of the STC-MEMS Business, the Company agreed to pay to FRMC a penalty, if the Company sold the property subject to the related Definitive Real Property Purchase Agreement within three (3) years after the date of such agreement for an amount in excess of $1.75 million, subject to certain enumerated exceptions. The penalty imposed would have been equivalent to the amount that the sales price of the property exceeded $1.75 million up to a maximum penalty. Due to the lapse of the three-year penalty period, the maximum penalty as of June 30, 2020 was $0.

	Maximum Penalty
Year 3, ending March 23, 2020	$ —

The fair value of the contingent liability was reduced to zero due to the lapse of the sale restriction period. As of June 30, 2020 and June 30, 2019, the fair value of the contingent liability was $0.0 million and $0.4 million, respectively. During the year ended June 30, 2020 and 2019, the Company marked the contingent liability to fair value and recorded a gain of $0.4 million and $0.8 million, respectively, relating to the change in fair value.

Litigation, Claims and Assessments

From time to time, the Company may become involved in lawsuits, investigations and claims that arise in the ordinary course of business. The Company believes it has meritorious defenses against all pending claims and intends to vigorously pursue them. While it is not possible to predict or determine the outcomes of any pending actions, the Company believes the amount of liability, if any, with respect to such actions, would not materially affect its financial position, results of operations or cash flows.

Effective November 5, 2018, the employment by the Company of its former principal financial officer, John T. Kurtzweil (the "Former CFO"), ended, after which the Former CFO filed for an arbitration hearing pursuant to the terms of his employment agreement and filed a complaint under the whistleblower provisions of the Sarbanes-Oxley Act of 2002 with the Occupational Safety and Health Administration ("OSHA") of the U.S. Department of Labor. On October 28, 2019, the Company and the Former CFO entered into a Settlement Agreement that resolved all pending disputes between the parties with no admission of liability by either party. OSHA approved the Settlement Agreement and closed its investigation of the Former CEO's whistleblower complaint on November 26, 2019. Pursuant to the Settlement Agreement, the Company paid the Former CFO an all-inclusive settlement amount of $375 thousand in cash. As part of the Settlement Agreement, all unvested restricted stock units and stock options were acknowledged as forfeited as of such date. The arbitration was closed on December 30, 2019.

Tax Credit Contingency

The Company accrues a liability for indirect tax contingencies when it believes that it is both probable that a liability has been incurred and that it can reasonably estimate the amount of the loss. The Company reviews these accruals and adjusts them to reflect ongoing negotiations, settlements, rulings, advice of legal counsel and other relevant information. To the extent new information is obtained and the Company's views on the probable outcomes of claims, suits, assessments, investigations or legal proceedings change, changes in the Company's accrued liabilities would be recorded in the period in which such determination is made.

The Company's gross unrecognized indirect tax credits totaled $0.1 million as of June 30, 2020 and $0.1 million as of June 30, 2019 and are recorded on the Consolidated Balance Sheet as a long-term liability.

Note 13. Related Party Transactions

Consulting Services

Total stock-based compensation expense related to stock-based awards granted for the Co-Chairman's consulting services was $40 thousand and $51 thousand for the years ended June 30, 2020 and 2019, respectively.

Equipment Purchase

On October 11, 2019, the Company issued 2,500 shares of common stock to the brother of the Company's Chief Executive Officer in exchange for equipment with a fair market value of $20,000.

Note 14. Income Taxes

On March 27, 2020, the CARES Act was enacted in response to COVID-19 pandemic. Under ASC 740, the effects of changes in tax rates and laws are recognized in the period which the new legislation is enacted. The CARES Act made various tax law changes including among other things (i) increased the limitation under IRC Section 163(j) for 2019 and 2020 to permit additional expensing of interest (ii) enacted a technical correction so that qualified improvement property can be immediately expensed under IRC Section 168(k) and (iii) made modifications to the federal net operating loss rules including permitting federal net operating losses incurred in 2018, 2019, and 2020 to be carried back to the five preceding taxable years in order to generate a refund of previously paid income taxes (iv) enhanced recoverability of AMT tax credits. Given the Company's full valuation allowance position, the CARES Act did not have a material impact on the financial statements.

Income Tax Expense

	June 30, 2020	June 30, 2019
Current:		
Federal	$ —	$ —
State and Local	—	—
Total Current Tax Provision	—	—
Deferred:		
Federal	—	—
State and Local	—	—
Total Deferred Tax Provision	—	—
Total Tax Provision	$ —	$ —

The provision for/(benefit from) income tax differs from the amount computed by applying the statutory federal income tax rate to income before the provision for/(benefit from) income taxes. The sources and tax effects of the differences are as follows:

	For the Year Ended June 30, 2020	For the Year Ended June 30, 2019
Income taxes at Federal statutory rate	(21.00)%	(21.00)%
State income taxes, net of Federal income tax benefit	(1.92)%	(0.45)%
Tax Credits	(1.10)%	(1.45)%
Permanent differences	(0.26)%	(0.23)%
Convertible Debt Discount	—%	2.89%
Other	0.02%	(0.02)%
Change in Valuation Allowance	24.31%	18.92%
Effect of changes in income tax rate applied to net deferred taxes	(0.05)%	1.34%
Income Tax Provision	**0.00**%	**0.00**%

The tax effects of temporary differences that give rise to the Company's deferred tax assets and liabilities are as follows, (in thousands):

	June 30, 2020	June 30, 2019
Deferred Tax Assets		
Net Operating Loss Carryforwards	$ 20,542	$ 13,196
Stock-based compensation	2,422	1,786
Credits	869	470
Other	484	346
	24,317	15,798
Deferred Tax Liabilities		
Convertible debt discount	(472)	(964)
Accumulated depreciation/basis differences	(1,150)	(925)
	(1,622)	(1,889)
Valuation Allowance	(22,695)	(13,909)
Net Deferred Tax Assets	**$ —**	**$ —**

At June 30, 2020, the Company had federal loss carryovers of approximately $34.2 million that will expire in stages beginning in 2034 if unused and federal loss carryovers of $58.6 million that will carry forward indefinitely. The North Carolina, New York, and California state loss carryovers of approximately $27.8 million, $11.1 and $7.2 million, respectively, will begin to expire in 2029 if unused. Federal research credits of $0.9 million will expire beginning in 2034 if not utilized.

The company has not performed a detailed analysis to determine whether an ownership change under IRC Section 382 has occurred during the year ended June 30, 2020 or during any earlier year. If upon a complete analysis the company were to determine that an ownership change under Section 382 had occurred the effect of the ownership change would be the imposition of annual limitations on the use of NOL carryforwards. Any limitation may result in the expiration of a portion or all of the NOLs before utilization.

Based on a history of cumulative losses at the Company and the results of operations for the years ended June 30, 2020 and 2019, the Company determined that it is more likely than not it will not realize benefits from the deferred tax assets. The Company will not record income tax benefits in the financial statements until it is determined that it is more likely than not that the Company will generate sufficient taxable income to realize the deferred income tax assets. As a result of the analysis, the Company determined that a full valuation allowance against the deferred tax assets is required. The net change in the valuation allowance during the year ended June 30, 2020 was an increase of approximately $8.8 million.

The Company's gross unrecognized tax benefits totaled $0.2 million as of June 30, 2020 and $0.1 million as of June 30, 2019. Of these amounts, $0.2 million and $0.1 million as of June 30, 2020 and June 30, 2019, respectively, represent the amounts of unrecognized tax benefit that, if recognized, would impact the effective tax rate in each of the fiscal years.

A reconciliation of June 30, 2019 through June 30, 2020 beginning and ending amount of gross unrecognized tax benefits is as follows (in thousands):

	June 30, 2020	June 30, 2019
Beginning Balance	$ 148	$ 296
Additions based on positions related to the current year	50	50
Additions for tax positions in prior years	2	—
Reductions for tax positions in prior years	—	(198)
Expiration of statute of limitations	—	—
Ending Balance	**$ 200**	**$ 148**

The unrecognized tax benefit of $200 thousand at the end of June 30, 2020 is recorded on the Consolidated Balance Sheet as a reduction to the carrying value of the gross deferred tax assets.

The Company's fiscal 2015, 2016, 2017, 2018 and 2019 federal and state returns remain open for examination. The Company is not currently under examination by any taxing authorities.

Note 15. Segment Information

Operating segments are defined as components of an enterprise about which separate financial information is available and evaluated regularly by the chief operating decision maker, or decision–making group, in deciding how to allocate resources and in assessing performance. The Company's chief operating decision maker is its Chief Executive Officer. The Company operates in two segments, Foundry Fabrication Services, which consists of engineering review services and STC-MEMS foundry services, and RF Filters which consists of amplifier and filter product sales, and grant revenue. The Company records all general and administrative costs in the RF Filters segment.

The Company evaluates performance of its operating segments based on revenue and operating profit (loss). Segment information for the years ended June 30, 2020 and 2019 are as follows (in thousands):

	Foundry Fabrication Services	RF Filters	Total
Year ended June 30, 2020			
Revenue	$ 991	$ 799	$ 1,790
Cost of revenue	703	1,711	2,414
Gross margin	288	(912)	(624)
Research and development	-	20,523	20,523
General and administrative	14	10,877	10,891
Income/(Loss) from Operations	**$ 274**	**$ (32,312)**	**$ (32,038)**
Year ended June 30, 2019			
Revenue	$ 1,058	$ 276	$ 1,334
Grant Revenue	-	109	109
Cost of revenue	811	202	1,013
Gross margin	247	183	430
Research and development	-	19,075	19,075
General and administrative	50	8,872	8,922
Loss from Operations	**$ 197**	**$ (27,764)**	**$ (27,567)**
As of June 30, 2020			
Accounts receivable	$ 71	$ 280	$ 351
Property and equipment, net	-	23,605	23,605
As of June 30, 2019			
Accounts receivable	$ 150	$ 135	$ 285
Property and equipment, net	54	15,124	15,178

Note 16. Subsequent Events

None

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Managements Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Securities Exchange Act of 1934 is (1) recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms and (2) accumulated and communicated to our management, including our principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure.

As of June 30, 2020, our management, with the participation of our Chief Executive Officer and Interim Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934). Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost- benefit relationship of possible controls and procedures. Our Chief Executive Officer and Interim Chief Financial Officer have concluded based upon the evaluation described above that, as of June 30, 2020, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements. A control system, no matter how well designed and operated, can only provide reasonable, not absolute, assurance that the objectives of the control system are met. Because of these inherent limitations, management does not expect that our internal controls over financial reporting can prevent all error and all fraud. Under the supervision and with the participation of our management, including our Chief Executive Officer and our Interim Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control—Integrated Framework (2013 Framework) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our Annual Report on Form 10-K for the year ended June 30, 2019, we identified certain material weaknesses in our internal control over financial reporting as disclosed in Item 9A of that report. During fiscal year 2020, our management with the oversight of the Audit Committee of our Board of Directors, engaged in efforts to remediate the material weaknesses identified. We have designed, implemented and tested enhancements to our internal control for operational effectiveness. Based on the results of our testing, management has concluded that the controls are adequately designed and operated effectively for a sufficient period of time during fiscal year 2020. Accordingly, the material weaknesses are considered to be remediated. Based on our evaluation under the framework in Internal Control—Integrated Framework, our management concluded that our internal control over financial reporting was effective as of June 30, 2020.

As we are no longer an "accelerated filer" under SEC rules, we are not required to provide an auditor's attestation of management's assessment of internal control over financial reporting as of June 30, 2020, although our auditor did provide such an attestation as of June 30, 2019, which was contained in our Annual Report on Form 10-K for that fiscal year.

Changes in Internal Control over Financial Reporting

During the quarter ended June 30, 2020, there were no changes in our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15(d)-15(f) promulgated under the Securities Exchange Act of 1934, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders.

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

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders.

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

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item is incorporated by reference to our Proxy Statement on Schedule 14A relating to our 2020 annual meeting of stockholders.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

The following Consolidated Financial Statements as set forth in Part II, Item 8 of this report are filed herein.

Consolidated Financial Statements

Financial Statement Schedules

All financial statement schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

Exhibits

EXHIBIT INDEX

Exhibit Number	Description
2.1	Plan of Conversion, dated December 15, 2016 *(incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the SEC on December 16, 2016)*
2.2	Definitive Asset Purchase Agreement dated March 23, 2017 by and between The Research Foundation for the State University of New York and the Company *(incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the SEC on March 24, 2017)*
2.3	Definitive Real Property Purchase Agreement dated March 23, 2017, by and between Fuller Road Management Corporation and the Company *(incorporated by reference to Exhibit 2.2 to the Company's Current Report on Form 8-K filed with the SEC on March 24, 2017)*
3.1	Articles of Conversion of the Company, filed with the Nevada Secretary of State on December 15, 2016 *(incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on December 16, 2016)*
3.2	Certificate of Conversion of the Company, filed with the Delaware Secretary of State on December 15, 2016 *(incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed with the SEC on December 16, 2016)*
3.3	Certificate of Incorporation, filed with the Delaware Secretary of State on December 15, 2016 *(incorporated by reference to Exhibit 3.3 to the Company's Current Report on Form 8-K filed with the SEC on December 16, 2016)*
3.4	Amended and Restated Bylaws of the Company *(incorporated by reference to Exhibit 3.5 to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 1, 2020)*
3.5	Certificate of Amendment to the Certificate of Incorporation of the Company, filed with the Delaware Secretary of State on November 4, 2019 *(incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on November 6, 2019)*
4.1	Indenture, dated as of May 14, 2018, by and among Akoustis Technologies Inc., Akoustis, Inc. and The Bank of New York Mellon Trust Company, N.A. *(incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on May 15, 2018)*
4.2	Indenture, dated as of October 23, 2018, by and between the Company and The Bank of New York Mellon Trust Company, N.A. *(incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on October 23, 2018)*
4.3	First Supplemental Indenture, dated as of October 23, 2018, by and between the Company and The Bank of New York Mellon Trust Company, N.A. *(incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC on October 23, 2018)*
4.4	Form of 6.5% Convertible Senior Note due November 30, 2023 *(incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed with the SEC on October 23, 2018)*
4.5	First Supplemental Indenture, dated as of October 18, 2018, among the Company, Akoustis, Inc. and The Bank of New York Mellon Trust Company, N.A. *(incorporated by reference to Exhibit 4.4 to the Company's Current Report on Form 8-K filed with the SEC on October 23, 2018)*
4.6	Second Supplemental Indenture, dated as of April 17, 2020, by and among Akoustis Technologies, Inc., Akoustis, Inc. and The Bank of New York Mellon Trust Company, N.A. *(incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on April 21, 2020)*
4.7	Second Supplemental Indenture, dated as of April 17, 2020, by and between Akoustis Technologies, Inc. and The Bank of New York Mellon Trust Company, N.A. *(incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC on April 21, 2020)*

Exhibit Number	Description
4.8*	Description of Common Stock of the Registrant Registered Pursuant to Section 12 of the Securities Exchange Act of 1934
10.1.1†	Akoustis, Inc. 2014 Stock Plan *(incorporated by reference to Exhibit 10.10 to the Company's Transition Report on Form 10-K filed with the SEC on October 31, 2016)*
10.1.2†	Declaration of Amendment to the Akoustis, Inc. 2014 Stock Plan *(incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed with the SEC on November 14, 2017)*
10.2.1†	Akoustis Technologies, Inc. 2015 Equity Incentive Plan *(incorporated by reference to Exhibit 10.10 to the Company's Current Report on Form 8-K filed with the SEC on May 29, 2015)*
10.2.2†	Form of Stock Option Agreement under the Akoustis Technologies, Inc. 2015 Equity Incentive Plan *(incorporated by reference to Exhibit 10.11 to the Company's Current Report on Form 8-K filed with the SEC on May 29, 2015)*
10.2.3†	Form of Restricted Stock Agreement, under the Akoustis Technologies, Inc. 2015 Equity Incentive Plan *(incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K filed with the SEC on June 29, 2016)*
10.3†	Employment Agreement between the Company and Jeffrey Shealy dated as of June 15, 2015 *(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 19, 2015)*
10.4†	Offer Letter from the Company to David M. Aichele *(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 30, 2017)*
10.5	Form of 2016 Placement Agent Warrant for Common Stock of the Company in connection with the Company's 2016 private placement offering *(incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on April 20, 2016)*
10.6	Form of Placement Agent Warrant in the 2016-2017 Offering *(incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed with the SEC on December 28, 2016)*
10.7	Form of Amended and Restated Placement Agent Warrant for Common Stock of the Company in connection with the Company's 2015 private placement offering and 2016 private placement offering *(incorporated by reference to Exhibit 10.12 to the Company's Quarterly Report on Form 10-Q filed with the SEC on February 14, 2017)*
10.8.1†	Akoustis Technologies, Inc. 2016 Stock Incentive Plan *(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on December 16, 2016)*
10.8.2†	Form of Restricted Stock Award Agreement under the Akoustis Technologies, Inc. 2016 Stock Incentive Plan *(incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed with the SEC on February 14, 2017)*
10.8.3†	Revised Form of Restricted Stock Award Agreement under the Akoustis Technologies, Inc. 2016 Stock Incentive Plan *(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 23, 2017)*
10.9	Form of Placement Agent Warrant in the 2017 Offering *(incorporated by reference to Exhibit 10.38 to the Company's Registration Statement on Form S-1 (SEC File No. 333-218245) filed with the SEC on May 25, 2017)*
10.10†	Summary of Akoustis Technologies, Inc. Director Compensation Program, effective October 3, 2017 *(incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q filed with the SEC on November 14, 2017)*
10.11	Form of Placement Agent Warrant in the 2017 Offering *(incorporated by reference to Exhibit 10.34 to the Company's Registration Statement on Form S-1 (SEC File No. 333-222552) filed with the SEC on January 16, 2018)*
10.12	Pledge and Security Agreement, dated as of May 14, 2018, by and among Akoustis Technologies, Inc., Akoustis, Inc. and The Bank of New York Mellon Trust Company, N.A., as Collateral Agent *(incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed with the SEC on May 15, 2018)*

Exhibit Number	Description
10.13	Grant Agreement, dated as of July 24, 2018, by and among Akoustis Technologies, Inc., Akoustis, Inc. and the Town of Canandaigua *(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on July 27, 2018)*
10.14††	Price Quotation, dated January 14, 2019, by and between the Company and ASML US, LLC *(incorporated by reference to Exhibit 10.39 of the Company's Annual Report on Form 10-K filed with the SEC on September 13, 2019)*
10.15†	Akoustis Technologies, Inc. 2018 Stock Incentive Plan *(incorporated by reference to Exhibit 10.40 of the Company's Annual Report on Form 10-K filed with the SEC on September 13, 2019)*
10.16†	Amendment to 2018 Stock Incentive Plan *(incorporated by reference to Appendix B of the Company's definitive proxy statement for its 2019 Annual Meeting of Stockholders, filed September 24, 2019)*
10.17†	Akoustis Technologies, Inc. Employee Stock Purchase Plan *(incorporated by reference to Exhibit 10.41 of the Company's Annual Report on Form 10-K filed with the SEC on September 13, 2019)*
10.18	Agreement of Sale, dated October 25, 2019, by and between the Company and EV Group, Inc. *(incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed with the SEC on November 7, 2019)*
10.19	Promissory Note, dated as of May 20, 2020, issued by Akoustis, Inc. in favor of Bank of America, NA. *(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 26, 2020)*
21.1*	Subsidiaries of the Company
23.1*	Consent of Marcum LLP
31.1*	Rule 13(a)-14(a)/15(d)-14(a) Certification of Principal Executive Officer
31.2*	Rule 13(a)-14(a)/15(d)-14(a) Certification of Principal Financial and Accounting Officer
32.1*	Section 1350 Certification of Principal Executive Officer
32.2*	Section 1350 Certification of Principal Financial and Accounting Officer
101§*	Interactive Data Files of Financial Statements and Notes.
101.ins*	Instant Document
101.sch*	XBRL Taxonomy Schema Document
101.cal*	XBRL Taxonomy Calculation Linkbase Document
101.def*	XBRL Taxonomy Definition Linkbase Document
101.lab*	XBRL Taxonomy Label Linkbase Document
101.pre*	XBRL Taxonomy Presentation Linkbase Document

* Filed herewith
† Management contract or compensatory plan or arrangement
†† Confidential portions of this exhibit have been omitted.

SIGNATURES

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

AKOUSTIS TECHNOLOGIES, INC.

Dated: August 21, 2020

By: */s/ Jeffrey B. Shealy*
Jeffrey B. Shealy
President and Chief Executive Officer

In accordance with the Exchange Act, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

SIGNATURE	TITLE	DATE
/s/ Jeffrey B. Shealy Jeffrey B. Shealy	Chief Executive Officer (Principal Executive Officer), Director	August 21, 2020
/s/ Kenneth E. Boller Kenneth E. Boller	Interim Chief Financial Officer (Principal Financial and Accounting Officer)	August 21, 2020
/s/ Arthur E. Geiss Arthur E. Geiss	Co-Chairman of the Board	August 21, 2020
/s/ Jerry D. Neal Jerry D. Neal	Co-Chairman of the Board	August 21, 2020
/s/ Steven P. DenBaars Steven P. DenBaars	Director	August 21, 2020
/s/ Jeffrey K. McMahon Jeffrey K. McMahon	Director	August 21, 2020
/s/ Suzanne B. Rudy Suzanne B. Rudy	Director	August 21, 2020

DESCRIPTION OF COMMON STOCK OF AKOUSTIS TECHNOLOGIES, INC.
REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The following information is a summary of information concerning the common stock, par value $0.001 per share (the "Common Stock"), of Akoustis Technologies, Inc. ("we," "our," or "us") and does not purport to be complete. It is subject to and qualified in its entirety by reference to our Certificate of Incorporation, as amended (the "Certificate of Incorporation"), our Amended and Restated Bylaws (the "Bylaws"), and the applicable provisions of the General Corporation Law of the State of Delaware (the "DGCL"), each of which are incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.8 is a part.

Authorized Common Stock

The Certificate of Incorporation authorizes the issuance of 100,000,000 shares of Common Stock. Our authorized but unissued shares of Common Stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange or automated quotation system on which our securities may be listed or traded.

Voting Rights

Except as otherwise required by the DGCL, at every annual or special meeting of stockholders, every holder of Common Stock is entitled to one vote per share. There is no cumulative voting in the election of directors.

Dividend, Liquidation and Other Rights

The holders of outstanding shares of Common Stock are entitled to receive dividends out of assets or funds legally available for the payment of dividends at such times and in such amounts as the Company's board of directors (the "Board of Directors") from time to time may determine. Any future determination to pay dividends will be at the discretion of the Board of Directors and will be dependent upon financial condition, results of operations, capital requirements and such other factors as the Board of Directors deems relevant.

The Common Stock is not entitled to pre-emptive rights and is not subject to conversion or redemption. Upon liquidation, dissolution or winding up of our company, the assets legally available for distribution to stockholders are distributable ratably among the holders of the Common Stock after payment of liquidation preferences, if any, on any outstanding payment of other claims of creditors.

Anti-Takeover Provisions

The following paragraphs regarding certain provisions of the DGCL, the Certificate of Incorporation, and the Bylaws are summaries of the material terms thereof and do not purport to be complete. We urge you to read the applicable provisions of the DGCL and the Certificate of Incorporation and Bylaws.

General

Provisions of the DGCL, and the Certificate of Incorporation and Bylaws could have the effect of discouraging others from attempting an unsolicited offer to acquire our company. Such provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Authorized but Unissued Shares

The authorized but unissued shares of our Common Stock and our preferred stock are available for future issuance without any further vote or action by our stockholders. These additional shares may be utilized for a variety of corporate purposes, including future public or private offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares of our Common Stock and our preferred stock could render more difficult or discourage an attempt to obtain control over us by means of a proxy contest, tender offer, merger or otherwise.

Director Vacancies

The Bylaws provide that all vacancies on the Board of Directors may be filled only by the affirmative vote of a majority of directors then in office, even if less than a quorum.

Special Meeting of Stockholders and Advance Notice Requirements for Stockholder Proposals and Director Nominations

The Bylaws require that special meetings of stockholders be called only by a majority of our entire Board of Directors, by the chairman of the board, if any, the Chief Executive Officer, if any, the President or the Secretary. In addition, the Bylaws provide that candidates for director may be nominated and other business brought before an annual meeting only by the Board of Directors or by a stockholder who gives written notice to us not less than 90 days, nor more than 120 days, prior to the first anniversary of the preceding year's annual meeting, subject to certain exceptions. Such stockholder's notice must set forth certain information required by the Bylaws. These provisions may have the effect of deterring unsolicited offers to acquire our company or delaying stockholder actions, even if they are favored by the holders of a majority of our outstanding voting securities.

Supermajority Voting for Amendments to our Bylaws

The Bylaws provide that the Board of Directors is expressly authorized to adopt, amend or repeal the Bylaws and that our stockholders may amend the Bylaws only with the approval of at least 66 2/3% of the voting power of all shares of our capital stock then outstanding.

Choice of Forum

The Bylaws provide that, subject to certain exceptions, the Court of Chancery of the State of Delaware will be the exclusive forum for any claim, including any derivative claim, (i) that is based upon a violation of a duty by a current or former director or officer or stockholder in such capacity or (ii) as to which the DGCL confers jurisdiction upon the Court of Chancery.

Business Combinations

The DGCL generally prohibits a corporation from engaging in any business combination with any interested stockholder for a three-year period following the time that the stockholder becomes an interested stockholder, unless:

- prior to such time, the Board of Directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of our voting stock outstanding at the time the transaction commenced, excluding certain shares; or
- at or subsequent to that time, the business combination is approved by our board of directors and by the affirmative vote of holders of at least 66 2⁄3% of the outstanding voting stock that is not owned by the interested stockholder.

Generally, a "business combination" includes a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. Subject to certain exceptions, an "interested stockholder" is a person who, together with that person's affiliates and associates, owns, or within the previous three years owned, 15% or more of our voting stock.

Under certain circumstances, this provision could make it more difficult for a person who would be an "interested stockholder" to effect various business combinations with a corporation for a three-year period. However, this provision generally does not apply to a corporation that does not have a class of voting stock that is listed on a national securities exchange or held of record by more than 2,000 stockholders. Accordingly, this provision does not currently apply to us.

Listing on the Nasdaq Capital Market

Shares of Common Stock are listed on the Nasdaq Capital Market under the symbol "AKTS."

Transfer Agent

The name, address and telephone number of the transfer agent of Common Stock is Broadridge Financial Solutions, Inc. at 51 Mercedes Way, Edgewood, New York 11717.

Exhibit 21.1

SUBSIDIARIES OF AKOUSTIS TECHNOLOGIES, INC.

Akoustis, Inc., a Delaware corporation

Exhibit 23.1

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statements of Akoustis Technologies, Inc. on Form S-3 (File Nos. 333-238130, 333-218245, and 333-222552), Form S-1 (File No. 333-225870), and Form S-8 (File Nos. 333-235665, 333-228451, 333-222917, and 333-215153), of our report dated August 21, 2020, with respect to our audits of the consolidated financial statements of Akoustis Technologies, Inc. as of June 30, 2020 and 2019 and for the two years in the period ended June 30, 2020, which report is included in this Annual Report on Form 10-K of Akoustis Technologies, Inc. for the year ended June 30, 2020.

Our report on the consolidated financial statements refers to a change in the method of accounting for lease due to adoption of the guidance in ASC Topic 842 effective July 1, 2019.

/s/ Marcum llp

Marcum llp
New York, NY
August 21, 2020

Exhibit 31.1

CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a)
OF THE SECURITIES EXCHANGE ACT OF 1934

I, Jeffrey B. Shealy, certify that:

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

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

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 21, 2020

/s/ Jeffrey B. Shealy
Jeffrey B. Shealy
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

**CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a)
OF THE SECURITIES EXCHANGE ACT OF 1934**

I, Kenneth E. Boller, certify that:

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

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

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 21, 2020

/s/ Kenneth E. Boller
Kenneth E. Boller
Interim Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Akoustis Technologies, Inc. (the "Company") on Form 10-K for the fiscal year ended June 30, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jeffrey B. Shealy, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 21, 2020

/s/ Jeffrey B. Shealy
Jeffrey B. Shealy
President and Chief Executive Officer
(Principal Executive Officer)

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Akoustis Technologies, Inc. (the "Company") on Form 10-K for the fiscal year ended June 30, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Kenneth E. Boller, Interim Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 21, 2020

/s/ Kenneth E. Boller
Kenneth E. Boller
Interim Chief Financial Officer
(Principal Financial and Accounting Officer)

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.