

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, 2022

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

(State or other jurisdiction of
incorporation or organization)

9805 Northcross Center Court, Suite A
Huntersville, NC

(Address of principal executive offices)

33-1229046

(IRS Employer
Identification No.)

28078

(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

Non-Accelerated Filer

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, 2021 was approximately \$331.1 million. For purposes of this computation, shares of Common Stock held by all officers, directors, and any 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 September 6, 2022, there were 57,204,697 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, 2022. Portions of such proxy statement are incorporated by reference into Part III of this Form 10-K.

TABLE OF CONTENTS

Item Number and Caption	Page
Cautionary Note Regarding Forward-Looking Information	ii
PART I	1
1. Business	1
1A. Risk Factors	13
1B. Unresolved Staff Comments	39
2. Properties	40
3. Legal Proceedings	40
4. Mine Safety Disclosures	40
PART II	41
5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases Of Equity Securities	41
6. [Reserved]	42
7. Management’s Discussion and Analysis of Financial Condition and Results of Operations	42
7A. Quantitative and Qualitative Disclosures About Market Risk	47
8. Financial Statements and Supplemental Data	F-1
9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	48
9A. Controls and Procedures	48
9B. Other Information	48
9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspection	48
PART III	49
10. Directors, Executive Officers and Corporate Governance	49
11. Executive Compensation	49
12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	49
13. Certain Relationships and Related Transactions, and Director Independence	49
14. Principal Accountant Fees and Services	49
PART IV	50
15. Exhibits and Financial Statement Schedules	50

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, Russian-Ukrainian conflict and other sources of volatility on our operations, financial condition and the worldwide economy, including our ability to access the capital markets,
- increases in prices for raw materials, labor, and fuel caused by rising inflation,
- our inability to obtain adequate financing and sustain our status as a going concern,
- 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 our New York wafer fabrication facility and related operations 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,
- the possibility that the anticipated benefits from our business acquisitions (including the acquisition of RFM Integrated Device, Inc. (“RFMi”)) will not be realized in full or at all or may take longer to realize than expected,
- the possibility that costs or difficulties related to the integration of acquired businesses’ (including RFMi’s) operations will be greater than expected and the possibility of disruptions to our business during integration efforts and strain on management time and resources;
- 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,
- claims of infringement, misappropriation or misuse of third-party intellectual property, including the lawsuit filed by Qorvo, Inc. in October 2021, that, regardless of merit, could result in significant expense and negatively impact our business results,
- our inability to attract and retain qualified personnel,
- results of any arbitration or litigation that may arise,
- 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
- our failure to obtain or maintain a Trusted Foundry accreditation or our New York fabrication facility, and
- shortages in supplies needed to manufacture our products, or needed by our customers to manufacture devices incorporating our products.

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 subsidiaries, Akoustis, Inc., also a Delaware corporation, and RFM Integrated Device, Inc., a Texas corporation (“RFMi”).

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

PART I

ITEM 1. BUSINESS

Overview

Akoustis Technologies, Inc., a Delaware corporation, was incorporated in 2013. The Company 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”), automotive, industrial and defense applications. Filters are critical in selecting and rejecting signals, and their performance enables differentiation in the functionality of 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 patented transfer process flow, called XBAWTM to manufacture our filters 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 5G, WiFi and defense bands using our proprietary resonator device models and product design kits (PDKs). As we qualify our RF filter products, we engage with target customers to evaluate our filter solutions. Our designs target UHB, (sub-6 GHz) 5G, WiFi and defense bands. More recently, we have engaged multiple customers whom lack access to high performance BAW filters and supply RFFE solutions for mobile applications such as smartphones, PC’s and AR/VR devices, to market and sell our products. Our RF filter solutions address problems (such as loss, bandwidth, power handling, and isolation) created by the growing number of frequency bands in the RFFE of mobile devices, PCs, automotive, infrastructure and premise equipment to support 5G, and WiFi. We prototype, sample and shipped commercial production volume of our single-band and multi-band low loss BAW filter designs for 5G frequency bands and 5 GHz and 6 GHz 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 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. Additionally, through our recent acquisition of RFM Integrated Device, Inc. (“RFMi”), we operate a fabless business whereby we make sales of complementary SAW resonators, RF filters, crystal (“Xtal”) resonators and oscillators, and ceramic products—addressing opportunities in multiple end markets, such as automotive and industrial applications.

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, automotive, industrial 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 Akoustis’ 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. RFMi products are manufactured by a third party and sold by RFMi either directly to customers or sold and shipped with Akoustis products.

Intellectual Property. As of August 31, 2022, our IP portfolio included 67 patents, including a blocking patent that we have licensed from Cornell University. Additionally, as of August 31, 2022, we have 117 pending patent applications. These patents cover our XBAW[®] RF filter technology from raw materials through the system architectures.

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 offer several ways to engage with potential customers. First, we engage with multiple wireless markets, providing standardized filters that we design and offer as standard catalog components. Second, we deliver unique filters to customer-supplied specifications, which we design and fabricate on a customized basis. Finally, we offer our models and design kits for our customers to design their own filters utilizing our proprietary technology.

We expect to continue to incur substantial costs for 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. To succeed across our combined portfolio of Akoustis, XBAW, and RFMi products, we must convince customers in a wide range of industries including mobile phone OEMs, RFFE module manufacturers, network infrastructure OEMs, WiFi CPE OEMs, medical device makers, automotive and defense customers to use our products in their systems and modules. For example, 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 company for XBAW filters.

To help drive our XBAW filter business, we plan to continue 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 XBAW technology, intellectual property, designs, and related improvements. Across our combined portfolio of Akoustis, XBAW, and RFMi products, we expect to continue 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, including when warranted by state and local guidelines. 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.

These actions and the global health crisis caused by COVID-19 have negatively impacted business activity across the globe. We observed declining demand and price reductions in the electronics industry as business and consumer activity has decelerated. Additionally, COVID-19 has contributed to some of the delays we have observed in certain suppliers’ shipment of materials necessary for us to manufacture our products and in certain vendors’ ability to deliver equipment for installation at our facilities. When COVID-19 is demonstrably contained, we anticipate that its effects on global commerce will subside; however, the timing and extent of this 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 ultimate 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 for fiscal year 2023 or beyond.

Recent Developments

On August 30, 2021, Akoustis announced that it had shipped the first 5G mobile filters using advanced wafer-level-packaging to a tier-1 RF component company.

On August 27, 2021, the Company announced that it had received a volume order for WiFi 6 XBAW™ filters, which include its 5.2 GHz and 5.6 GHz products.

On August 25, 2021, Akoustis announced that it had received a design win for WiFi 6E for a multi-user-multiple-in-multiple-out (MU-MIMO) gateway product that will use its 5.5 GHz and 6.5 GHz filters products.

On August 18, 2021, the Company announced that Kamran Cheema had joined Akoustis as Vice President of Engineering.

On July 29, 2021, Akoustis announced that it had been awarded two design wins from a Citizens Broadband Radio Service customer for networking equipment and end-user devices.

On July 14, 2021, the Company announced that it had received a volume development order for a WiFi 6E diplexer from a tier-1 personal computing (PC) chipset customer.

On October 13, 2021, Akoustis announced that it had received a design win and increased volume shipments of its 5.5 GHz and 6.5 GHz XBAW™ filters to a tier-1 Wi-Fi 6E original equipment manufacturer.

On October 14, 2021, Akoustis announced that it was entering the timing control market with ultra-high frequency XBAW™ resonators.

On October 18, 2021, Akoustis announced that it was acquiring a majority position in RFMi, a fabless supplier of acoustic wave resonators and filters.

On November 3, 2021, Akoustis announced that it had engaged with a third mobile customer, a RF front-end module maker.

On November 16, 2021, Akoustis announced that it had received a Wi-Fi 6E design win for a MU-MIMO gateway product from a new customer.

On December 16, 2021, Akoustis announced that it had received a purchase order from a new tier-1 5G mobile customer.

On January 31, 2022, Akoustis announced that it had received five new design wins, increasing the total number of Wi-Fi design wins from eight to thirteen.

On February 10, 2022, the Company announced the appointment of Ken Boller as its new Chief Financial Officer.

On February 22, 2022, Akoustis announced that it had received a 5G mobile XBAW filter order from a new Tier-1 radio frequency module and filter maker.

On May 2, 2022, the Company announced that it had shipped a second XBAW® filter design in a new wafer-level-package to a tier-1 mobile customer.

On June 2, 2022, Akoustis announced that it was entering production with Aruba Networks for a new line of ultra-wideband Wi-Fi 6E products.

On June 23, 2022, the Company announced that it had signed a new multi-year Defense Advanced Research Projects Agency (“DARPA”) contract to advance XBAW® technology.

On July 11, 2022, Akoustis announced that it had named Kamran Cheema its new Chief Product Officer.

On August 9, 2022, the Company announced that it had shipped a second 5G mobile design in a new wafer-level-package to its first foundry customer.

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 services (which we exited in 2021) and engineering services. We have historically incurred losses which 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.

The Company expects that its current cash and cash equivalents are 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. Except pursuant to its ATM Sales Agreement with Oppenheimer & Co. Inc., Craig-Hallum Capital Group LLC, and Roth Capital Partners, LLC, the Company has no commitments or arrangements 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.

Recent Financing Activity

ATM Equity Offering Programs

On May 8, 2020, the Company entered into an ATM Equity OfferingSM Sales Agreement with BofA Securities, Inc. and Piper Sandler & Co., which was amended on February 19, 2021, pursuant to which the Company could sell from time to time shares of Common Stock having an aggregate offering price of up to \$100,000,000 (the “2020 Equity Offering Program”). On May 2, 2022, the Company entered into an ATM Sales Agreement with Oppenheimer & Co. Inc., Craig-Hallum Capital Group LLC, and Roth Capital Partners, LLC pursuant to which the Company may sell from time-to-time shares of Common Stock having an aggregate offering price of up to \$50,000,000 (the “2022 Equity Offering Program”). During the fiscal year ended June 30, 2022, the Company sold a total of 4,178,318 shares of Common Stock at a weighted average price to the public of \$6.75 per share through the 2020 Equity Offering Program and the 2022 Equity Offering Program for aggregate gross proceeds of approximately \$28.2 million, before deducting compensation paid to the sales agents and other offering expenses of approximately \$0.6 million. These amounts include a total of 533,922 shares of Common Stock sold during the fiscal quarter ended June 30, 2022 under the 2022 Equity Offering Program at a weighted average price to the public of \$3.88 per share through the 2022 Equity Offering Program for aggregate net proceeds of approximately \$2.0 million, after deducting compensation paid to the sales agents of \$0.1 million and other expenses. On May 25, 2022, the Company announced that it was suspending sales under the 2022 Equity Offering Program in light of market conditions. If, in the future, the Company determines to resume sales pursuant to the 2022 Equity Offering Program, it intends to notify investors by the filing of a Current Report on Form 8-K or other public announcement.

Convertible Note Offering

On June 9, 2022, the Company issued \$44.0 million aggregate principal amount of its 6.0% Convertible Senior Notes due 2027 (the “Notes”) guaranteed by its wholly-owned subsidiary, Akoustis, Inc. The Notes were issued pursuant to an indenture (the “Indenture”), dated June 9, 2022, among the Company, the Guarantor and The Bank of New York Mellon Trust Company, N.A., as trustee. The Notes bear interest at a rate of 6.0% per year until maturity on June 15, 2027, payable semi-annually beginning on December 15, 2022. At the Company’s option, interest may be paid in cash and/or shares of Common Stock. The initial conversion rate for the Notes is 212.3142 shares of Common Stock (subject to adjustment as provided in the Indenture) per \$1,000 principal amount of the Notes, which is equal to an initial conversion price of approximately \$4.71 per share.

Our XBAW Filter Technology and Business

Current RF acoustic wave filters utilize piezoelectric material physical properties, the resonator device structure and the manufacturing process technology. Existing BAW filters use an “acoustic wave ladder” that is based on a monolithic topology approach using polycrystalline materials.

XBAW technology encompasses cutting-edge polycrystalline, single-crystal and other 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 to fabricate our resonators and filters. We hold many issued and pending patents on our XBAW wafer process flow, which is compatible with wafer level packaging (WLP) that allows for low-profile, cost-effective filters to be produced.

Technological Challenges Facing the Mobile Device Industry

Rising consumer demand for always-on wireless broadband connectivity creates 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). Rapid growth in mobile data traffic tests 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 has continued 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 2022 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.

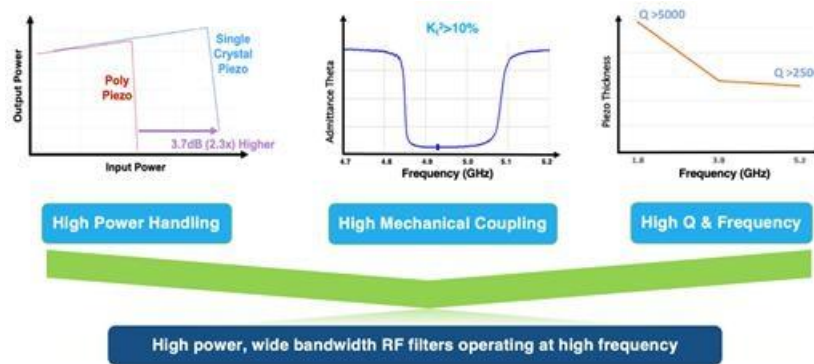
In addition, signal loss of current generation acoustic wave filters is excessively high, and up to half of the transmit power is wasted as heat, which ultimately constrains battery life. Another challenge is that the allocated spectrum for mobile communication bands requires high bandwidth RF filters, 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 XBAW technology to produce filters that will reduce the overall system cost and improve performance of the RFFE.

Our XBAW Filter Solutions

Our XBAW filter business is focused on the commercialization of wide bandwidth RF filters operating in the high frequency spectrum known as the sub 8 GHz bands. Using our XBAW technology, we believe these filters enable new power amplifier duplexer (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, the focus of our XBAW filter business will be to expand our market share by engaging with additional mobile phone OEMs and RFFE module manufacturers. We manufacture our XBAW wafers in our Canandaigua, NY fabrication facility where we continue to focus on the commercialization of our filters using our XBAW technology. We plan to continue 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 high purity piezoelectric materials.

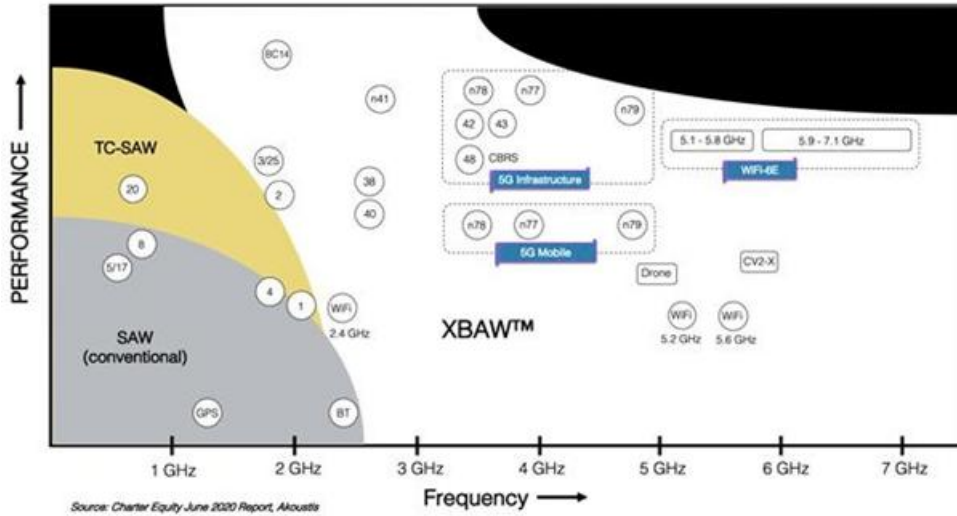
Figure 1-Characteristics of our high purity piezoelectric materials used to fabricate our BAW RF filters.



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.

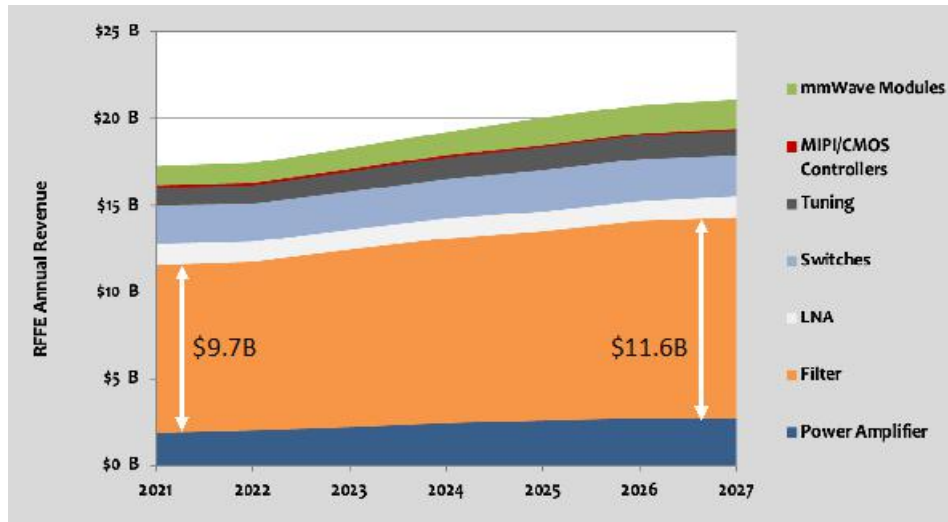
Figure 2- The potential range of our technology.



Pure-Play Filter Provider Enables New Module Competition

Given the high sound velocity in our piezoelectric materials, our XBAW technology allows for a wide range of frequency coverage, and we plan to supply XBAW 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 2021 - 2027 (Source: Mobile Experts 2022).



Commercialization of XBAW Filters

The immediate focus of our XBAW filter business 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 sub 8 GHz RF filter technology. We are currently developing commercial single-band XBAW filters through our wafer fabrication facility in Canandaigua, New York. We are focused on developing fixed-band XBAW 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 all 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 as of end fiscal 2022, we have shipped more than 32 million filters to the WiFi, 5G infrastructure and defense markets.

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. Compared to legacy 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 \$35.7 million for the year ended June 30, 2022, and \$24.1 million for the year ended June 30, 2021. 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 multiple new BAW filters which are currently sampling and in production 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.

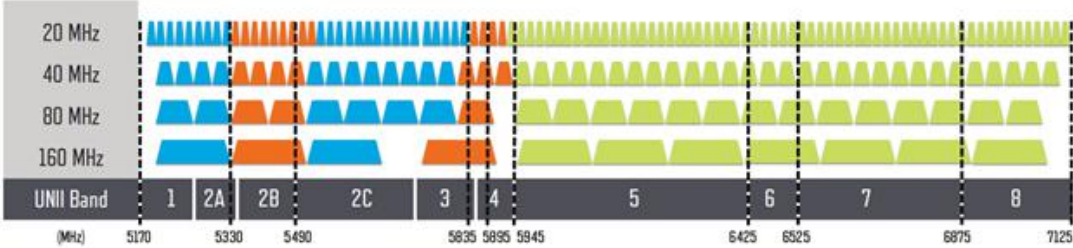
Recent Developments in R&D

We concentrated on several products and end markets in fiscal 2022 including 5G mobile, 5G infrastructure, WiFi and the defense market.

In 5G mobile, we have five active customer engagements. Our first customer is a tier-2 RF module maker that is designing an RF filter using our proprietary and patented XBAW[®] process that will utilize our new, advanced wafer-level-packaging. This customer is expected to complete the design of this filter in calendar 2022 and enter pre-production in the second half of calendar 2023. Our second customer is a tier-1 RF component company and has engaged Akoustis to develop two filters for 5G connectivity. Akoustis has shipped multiple designs to this customer over the past four months in new, advanced wafer-level-packaging and expects to enter pre-production with the first filter by early calendar 2023. Our third customer is a tier-2 RF component company focused on 4G/5G mobile handsets in Asia. Akoustis is developing a XBAW[®] filter for this customer to address challenging coexistence bands in 4G and 5G mobile. Our fourth mobile customer is a tier-1 RF module maker that has engaged Akoustis to develop an XBAW[®] filter to address a challenging coexistence band in 5G mobile. Once design is complete, Akoustis expects to sign a foundry agreement with this customer and expects to enter production with this customer in calendar 2024. Finally, our fifth mobile customer is a leading tier-1 RF module maker that has engaged Akoustis to develop a new 5G filter utilizing our new, state-of-the-art wafer-level-packaging technology. Akoustis delivered early engineering samples to this customer in the second half of fiscal 2022 and expects to continue to work closely with this customer over the next 12-18 months before entering production in calendar 2025.

Advancements in our Wi-Fi portfolio continued in fiscal 2022. With the FCC’s decision to increase the available spectrum for Wi-Fi with the ratification of 5.9-7.1 GHz in April 2020, new filters are needed that can operate at high frequency with ultra-wide bandwidth. This drove investment in the development of both standard and custom XBAW[®] filters to address this new market over the past twenty-four months. We announced our first two Wi-Fi 6E filters, in fiscal 2021 including a 5.5 GHz and 6.5 GHz XBAW[®] filter solution with 675 MHz and 1180 MHz of bandwidth. In early fiscal 2022, we entered the Wi-Fi 6E market with our first design win in August of 2021 for a multiple-in-multiple-out (MIMO) gateway product. By the end of the second quarter, we added multiple new Wi-Fi design wins and added two additional Wi-Fi 6E customers and one additional Wi-Fi 6 customer in production, exiting the quarter with five customers in production, up from one at the end of the prior calendar year.

Figure 4 –Wi-Fi 6E and emerging Wi-Fi 7 channel frequency spectrum



In early January 2022, we announced the addition of five additional design wins in Wi-Fi, four in Wi-Fi 6E and one in Wi-Fi 6, bringing the total number of Wi-Fi design wins to thirteen. We added two additional design wins in April, bringing the total number to fifteen, and we received one additional design win in Wi-Fi 6E in the June 2022 quarter. We are currently sampling and shipping volume pre-production filters with multiple OEMs, ODMs and SoC makers

In June 2020, we entered into a strategic purchase agreement with a tier 1 enterprise-focused WiFi OEM to create customer WiFi 6E XBAW filters for a MU-MIMO enterprise router product. During fiscal 2021 and 2022, we developed multiple filters for this customer, all of which have been design-locked and successfully completed qualification in the June 2022 quarter. We expect to enter production with this customer in the first half of fiscal 2023.

In April, 2021, we announced that we had developed two new Wi-Fi 6E XBAW filters, a 5.6 GHz filter and a 6.6 GHz filter. The 5.6 GHz filter module covers the entire UNII 1-4 spectrum and enables an additional 80 MHz and 160 MHz channel in UNII 4, while the 6.6 GHz filter module covers the UNII 5-8 spectrum. Current WiFi 6E configurations allow for the use of six 80 MHz and three 160 MHz channels in the UNII 1-3 spectrum and fourteen 80 MHz and seven 160 MHz channels in the UNII 5-8 spectrum. The new XBAW 5.6/6.6 GHz coexistence filter modules allow for the use of seven 80 MHz and three 160 MHz channels in the UNII 1-4 spectrum and twelve 80 MHz and six 160 MHz channels in the UNII 5-8 spectrum. Given that the 6 GHz portion of the WiFi 6E standard is just beginning to experience utilization, this new XBAW coexistence solution allows for an environment of greater capacity in the 5 GHz bands. We received our first order from a tier-1 consumer-focused OEM on the same day we introduced the filters, with the first order for the development of new multi-user, multiple-in-multiple-out mesh routing products for the consumer market.

We had several significant advancements in our CBRS and 5G mobile infrastructure business during fiscal 2022. In the June quarter, we entered production with three CBRS infrastructure OEM’s, our first production ramps in mobile infrastructure. Also in the June quarter, we finished the development of our new 3.8 GHz filter for the US market. In late calendar 2020, the FCC auctioned frequencies between 3.7 GHz and 3.98 GHz for 5G mobile use in the United States. Carriers are currently building networks that operate between 3.7 GHz and 3.98 GHz, and we expect to begin sampling our new 3.8 GHz filter to OEMs for use in small cell base stations, which are expected to begin roll out in late calendar 2023 and beyond.

In the defense market, we built on our early successes in phased array radar and drone filters with the award of a Defense Advanced Research Projects Agency (DARPA) contract to advance XBAW technology in October of 2020, and the award of a second DARPA contract in April of 2022 to advance the Company's XBAW technology to 18 GHz. The first program, a Direct-to-Phase-2 (DP2) program, is to facilitate MEMS development, produce novel piezoelectric materials and device designs for both commercial and defense markets. One of the major outcomes from the DP2 program is to develop a piezo MEMS process design kit (PDK) for the Company's proprietary and patented XBAW process which is expected to support customer engagements that leverage the PDK to create devices and circuits, including RF filters, using the XBAW process. Under the second program, the Company intends to develop a novel mode overtone approach to circumvent trade-offs inherent in traditional BAW frequency scaling approaches.

Akoustis currently has 21 commercial XBAW filters in its product catalog, and recently introduced 5.6 GHz and 6.6 GHz Wi-Fi 6E coexistence filter modules, which when qualified, will bring the number of catalog products to 23. Current product catalog filters include a 5.6 GHz Wi-Fi filter, a 5.2 GHz Wi-Fi filter, a 5.5 GHz Wi-Fi-6E filter, a 6.5 GHz Wi-Fi 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, Wi-Fi CPE and defense markets.

Our RFMi Technology and Business

RFMi is focused on supplying SAW and Xtal based frequency components to automotive, industrial IoT, medical, telecom, consumer, and other markets. The team designs, develops and markets under RFMi-branded SAW band pass filters, notch filters, diplexers, duplexers, resonators and delay lines, as well as Xtal resonators, temperature sensing Xtal resonators, temperature compensated crystal oscillators ("TCXO"), voltage controlled temperature compensated crystal oscillators ("VCTCXO"), crystal oscillators ("XO"), voltage controlled crystal oscillators ("VCXO"), oven controlled crystal oscillators ("OCXO") and Xtal filters, etc.

Technological Challenges Facing Customers for RFMi-branded Solutions

While wireless spectrum expands to above 3GHz where Akoustis XBAW products are focused, the spectrum under 3GHz is also becoming more and more crowded. Customers are losing "guard bands" next to their operating spectrum to competing applications and operators, and "co-existence" has become necessary for functionality for wireless electronics. LTE applications increasingly need to co-exist with Industrial, Scientific, and Medical ("ISM") band applications, satellite signals are interfered by terrestrial signals, industrial wireless control signals are saturated by communication signals, even medical wireless signals can be interrupted by other RF power outputs. The more traditional filtering technologies, like L-C (inductor – capacitor) and ceramic filters, may not have a Q factor high enough to supply steep roll-off from passband to rejection band. On the other hand, the demand for available data has also exploded, due to the increasing speed of data transmission and digital communication, which requires faster and more accurate piezo-ceramic resonators.

Our RFMi-branded Solutions for the RFMi Customers

RFMi is addressing jamming and high data rate problems by focusing on frequency components and supplying diverse and flexible SAW and Xtal products. In its operation spectrum (about 30MHz to 3GHz), SAW technology offers one of the highest Q factors. RFMi provides custom and standard SAW band pass filters to allow a signal spectrum to pass while rejecting the other signals, as well as a SAW diplexer with one input and two output, SAW duplexers that transmit and receive simultaneously for Frequency Division Duplex ("FDD") applications, and SAW resonators for high frequency transmitters, as well as custom delay lines. For Xtal products, instead of only supplying standard Xtal resonators at a few frequencies, RFMi provides a family of Xtal products and supports custom designs to accommodate a wider temperature range than standard products, stable frequency, and low jitter and phase noise.

Raw Materials

Within its internal manufacturing operation for XBAW filters, 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.

RFMi Supply Chain

RFMi mainly relies on its contract manufacturer, Tai-Saw Technology Co., Ltd. (“TST”) to source raw materials, such as different chemicals and gases for front and back-end manufacturing, quartz, lithium tantalate and certain bonded wafers, metal targets, Xtal blanks, semiconductor IC’s, aluminum bonding wires and flip chip gold stub bump supplies, packages and lids. Most raw materials have dual or multi-sources. However, certain materials, e.g., high temperature co-fired ceramic (“HTCC”) ceramic packages, bonded wafers and automotive grade TCXO/VCTCXO IC’s are single-sourced as there is no alternative supplier or the alternative supplier does not guarantee automotive grade materials. Many of RFMi’s customers are automotive and require a Production Part Approval Process (“PPAP”), where using an alternative source may require re-PPAP and take efforts and time. RFMi intends to diversify its supply chain, however, it takes time and resources. Certain raw material, like HTCC ceramic packages, may not have a second source for the foreseeable future.

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 31, 2022, our IP portfolio included 67 patents, including one blocking patent that we have licensed from Cornell University. Additionally, we have 117 active and pending patent applications. These patents cover our XBAW 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 2040. 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 has 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. (“Murata”), 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/5G cellular market.

We 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 approach prospective customers as a pure-play filter supplier, offering advantages in performance over the full frequency range at competitive costs. Our challenges 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.”

The Xtal market is more mature and there are many players, including Epson, KDS Daishinku, Kyocera, Murata and NDK from Japan and TXC from Taiwan. Our RFMi products are largely focused on niche markets such as Industrial IoT and professional audio, which may reduce competition with these large, high volume competitors. In addition, our RFMi products primarily consist of TCXO, VCTCXO and VCXO, instead of low cost Xtal. However, we may still compete with market participants with more resources and purchasing power than us.

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, 2022, we had a total of 205 full-time employees plus 4 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.

Like our XBAW products, RFMi’s SAW and Xtal products are frequency components and are subject to similar FCC rules. For instance, many of RFMi’s customers operate in ISM (Industrial, Scientific, and Medical) band, MICS (Medical Implant Communication System), WMTS (Wireless Medical Telemetry Service) and other bands regulated by FCC, in which transmission power level is restricted and products have to pass the FCC, and in certain cases FDA certification to be allowed in the market. Even though RFMi’s components do not need to be certified by FCC and/or FDA, our customers modules and systems which incorporate RFMi components may need to be certified. Any failure of RFMi’s customers to be certified would affect RFMi’s sales.

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.

Risk Factors Summary

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 may not generate sufficient revenues to achieve profitability.
- We are dependent on the proper functioning of our critical facilities, our supply chain and distribution networks and the financial stability of our customers.
- The industry and the markets in which the Company operates are highly competitive and subject to rapid technological change.
- We are still developing many of our products, and they may not be accepted in the market.
- We face risks associated with the operation of our manufacturing facility.
- The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future.
- Problems in scaling our manufacturing operations or poor manufacturing yields could have a material adverse effect on our business.
- Industry overcapacity could cause us to underutilize our manufacturing facilities and have a material adverse effect on our financial performance.
- 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.
- We may be subject to risks related to doing business in, and having counterparties based in, foreign countries.
- We depend on a few large customers for a substantial portion of our revenue.
- Global shortages in manufacturing capacities could negatively affect our operations and negatively impact our results of operations.
- Changes in general economic conditions, together with other factors, cause significant upturns and downturns in the semiconductor industry, and our business, therefore, may also experience cyclical fluctuations in the future.
- 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.

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.
- We have a limited number of patent applications, which may not result in issued patents or patents that fully protect our intellectual property.
- We are and may in the future be involved in lawsuits to protect or enforce our patents, which could be expensive, time-consuming and unsuccessful.
- We need to protect our trademark rights and disclosure of our trade secrets to prevent competitors from taking advantage of our goodwill.
- Development of certain technologies with our customers or manufacturers may result in restrictions on jointly-developed intellectual property.
- We are and 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.

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.

Risks Related to Regulatory Requirements

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

Investment Risks

- Our common stock has been thinly traded and its share price in the public markets has experienced, and may in the future experience, extreme volatility.
- Stockholders may experience dilution of their ownership interests because of the future issuance of additional shares of our stock or other securities.

General Risk Factors

- Security breaches and other disruptions could compromise our proprietary information and expose us to liability, which would cause our business and reputation to suffer.
- 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.
- 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.
- 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 business.
- There could be an adverse change or increase in the laws and/or regulations governing our business.
- We may engage in future acquisitions that could disrupt our business, cause dilution to our shareholders and harm our financial condition and operating results.
- Delaware law, our charter documents, and the ability of our Board of Directors to issue additional stock could impede or discourage a takeover or change of control that stockholders may consider favorable.
- 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.

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 RFFE's 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 is 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 (which we exited in 2021), issuances of our equity, and debt. 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 have recently engaged, and may in the future engage, in acquisitions that could disrupt our business, cause dilution to our shareholders and harm our financial condition and operating results.

In October 2021, we acquired a majority ownership position in RFM Integrated Device, Inc. (“RFMi”) and, on April 29, 2022, exercised the right to acquire the remaining 49%. The consideration for the acquisition includes cash and common stock as well as possible earn-out payments that may be paid in cash or common stock based on its future trading price. We may in the future make additional 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, such as of RFMi, we cannot assure you that it will ultimately strengthen our competitive position, that it will be viewed positively by customers, financial markets or investors or that we will otherwise realize the expected benefits of such an acquisition to the anticipated extent or at all. Furthermore, the acquisition of RFMi and any future acquisitions could pose numerous additional risks to our expected operations, including, but not limited to:

- 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, which may have been previously unknown or not discoverable through diligence, 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.

Acquisitions may also have unanticipated tax, legal, regulatory and accounting ramifications, including recording goodwill and non-amortizable intangible assets that are subject to impairment testing on a regular basis and potential periodic impairment charges and incurring amortization expenses related to certain intangible assets.

If our goodwill and intangible assets on our consolidated balance sheet arising from the RFMi acquisition become impaired, it would require us to record a material charge to earnings in accordance with generally accepted accounting principles.

As a result of our acquisition of RFMi, we recorded approximately \$8.1 million of goodwill and \$9.5 million of intangible assets which are currently shown as assets on our consolidated balance sheet at June 30, 2022. Generally Accepted Accounting Principles (“GAAP”) require us to test our goodwill and intangible assets for impairment on an annual basis, or more frequently if indicators for potential impairment exist. The testing required by GAAP involves estimates and judgments by management. Although we believe our assumptions and estimates are reasonable and appropriate, any changes in key assumptions, including a failure to meet business plans or other unanticipated events and circumstances, may affect the accuracy or validity of such estimates. If in the future we determine that an impairment exists, we may be required to record a material charge to earnings in our consolidated financial statements during the period in which any impairment of our goodwill or intangible assets is determined.

We are subject to a number of restrictive covenants, relating to our indebtedness, which may restrict our business and financing activities.

The indenture 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 indenture 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 convertible notes, which could result in an acceleration of our indebtedness.

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 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, and the uncertainty as to potential future waves of COVID-19 infections, it is unclear how economic activity and workflows will continue to be impacted and for how long. Many employers in the United States have in the past or are currently 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 in the past implemented, and may in the future implement social distancing measures, daily self-health attestations, and mandatory mask policies, including when warranted by state and local guidelines. We also have implemented in the past new staffing plans in our facilities whereby certain employees worked remotely and the remaining on-site force was divided into multiple shifts or segregated in different parts of the facility. Our actions continue to evolve in response to new government measures, available vaccines, 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.

The industry and the markets in which the Company operates are highly competitive and subject to rapid technological change. Therefore, in order for our products 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 RFFE, 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 products 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 technologies, 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 BAW 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 BAW 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 BAW 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.

Winning business in the semiconductor industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.

Our business is dependent on us winning competitive bid selection processes, known as “design wins”. These selection processes are typically lengthy and can require us to dedicate significant development expenditures and scarce engineering resources in pursuit of a single customer opportunity. Failure to obtain a particular design win may prevent us from obtaining design wins in subsequent generations of a particular product. This can result in lost revenue and can weaken our position in future selection processes.

Winning a product design does not guarantee sales to a customer. A delay or cancellation of a customer’s plans could materially and adversely affect our financial results, as we incur significant expense in the design process and may generate little or no revenue from it. In addition, the timing of design wins is unpredictable and implementing production for a major design win, or multiple design wins at the same time, may strain our resources and supply chain. In such event, we may be forced to dedicate significant additional resources and incur additional costs and expenses. Further, often customers will only purchase limited numbers of evaluation units until they qualify the products and/or the manufacturing line for those products. The qualification process can take significant time and resources. Delays in qualification or failure to qualify our products may cause a customer to discontinue use of our products and result in a significant loss of revenue. Finally, customers could choose at any time to stop using our products or could fail to successfully market and sell their products, which could reduce demand for our products, and cause us to hold excess inventory, materially adversely affecting our business, financial condition and results of operations. These risks are exacerbated by the fact that many of our products, and the end products into which our products are incorporated, often have very short life cycles.

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.

We are dependent upon third parties for the supply of raw materials and components.

Our manufacturing operations depend on obtaining adequate supplies of raw materials and components used in our manufacturing processes at a competitive cost, including silicon wafers, copper lead frames, precious and rare earth metals, ceramic packages and various chemicals and gases. Although we maintain relationships with suppliers located around the world with the objective of ensuring that we have adequate sources for the supply of raw materials and components for our manufacturing needs, increases in demand from the semiconductor industry for such raw materials and components, as well as increased demand for commodities in general, can result in tighter supplies and higher costs. Our suppliers may not be able to meet our delivery schedules, we may lose a significant or sole supplier, a supplier may not be able to meet performance and quality specifications and we may not be able to purchase such supplies or material at a competitive cost. If a supplier were unable to meet our delivery schedules or if we lost a supplier or a supplier were unable to meet performance or quality specifications, our ability to satisfy customer obligations would be materially and adversely affected. In addition, we review our relationships with suppliers of raw materials and components for our manufacturing needs on an ongoing basis. In connection with our ongoing review, we may modify or terminate our relationship with one or more suppliers. We may also enter into sole supplier arrangements to meet certain of our raw material or component needs. While we do not typically rely on a single source of supply for our raw materials, we are currently dependent on a limited number of sole-source suppliers. If we were to lose these sole sources of supply, for any reason, a material adverse effect on our business could result until an alternate source is obtained. As certain materials are highly specialized, the lead time needed to identify and qualify a new supplier is typically lengthy and there is often no readily available alternative source. To the extent we enter into additional sole supplier arrangements for any of our raw materials or components, the risks associated with our supply arrangements would be exacerbated.

The ongoing supply shortage experienced by the semiconductor industry has disrupted and will likely continue to disrupt normal business activity, and may have an adverse effect on our results of operations.

The global silicon semiconductor industry is experiencing a shortage in supply and difficulties in ability to meet customer demand. In particular, the recent government-mandated COVID-19 containment measures in China have impacted supply shipments and created ongoing risk and uncertainty. These issues have led to an increase in lead-times of the production of semiconductor chips and components.

We have experienced, and expect to continue to experience, disruption to parts of our semiconductor supply chain, including procuring necessary components and inputs, such as wafers and substrates, in a timely fashion, with suppliers increasing lead times or placing products on allocation and raising prices. We have also incurred higher costs to secure available inventory, or have extended our purchase commitments or placed non-cancellable orders with suppliers, which introduces inventory risk if our forecasts and assumptions are inaccurate. In addition, disruptions to commercial transportation infrastructure have increased delivery times for materials and components to our facilities and, in some cases, our ability to timely ship our products to customers. We have seen some of our customers become more conservative in response to these complications by reducing their purchases and inventories or postponing capital expenditures, including product orders from us.

We believe the global supply chain challenges and their adverse impact on our business will persist and the degree to which the pandemic ultimately impacts our business and results of operations will depend on future developments beyond our control.

Social and environmental responsibility regulations, policies and provisions, as well as customer and investor demands, may make our supply chain more complex and may adversely affect our relationships with customers and investors.

There is an increasing focus on corporate social and environmental responsibility in the semiconductor industry, particularly with OEMs that manufacture consumer electronics. A number of our customers have adopted, or may adopt, procurement policies that include social and environmental responsibility provisions or requirements that their suppliers should comply with, or they may seek to include such provisions or requirements in their procurement terms and conditions. An increasing number of investors are also requiring companies to disclose corporate social and environmental policies, practices and metrics. In addition, various jurisdictions are developing climate change-based laws or regulations that could cause us to incur additional direct costs for compliance, as well as indirect costs resulting from our customers, suppliers, or both incurring additional compliance costs that are passed on to us. These legal and regulatory requirements, as well as investor expectations, on corporate environmental and social responsibility practices and disclosure, are subject to change, can be unpredictable, and may be difficult and expensive for us to comply with, given the complexity of our supply chain and our significant outsourced manufacturing. If we are unable to comply, or are unable to cause our suppliers or manufacturers to comply, with such policies or provisions or meet the requirements of our customers and investors, a customer may stop purchasing products from us or an investor may sell their shares, and may take legal action against us, which could harm our reputation, revenue and results of operations.

In addition, as part of their corporate social and environmental responsibility programs, an increasing number of OEMs are seeking to source products that do not contain minerals sourced from areas where proceeds from the sale of such minerals are likely to be used to fund armed conflicts, such as in the Democratic Republic of Congo. This could adversely affect the sourcing, availability and pricing of minerals used in the manufacture of semiconductor devices, including our products. As a result, we may face difficulties in satisfying these customers' demands, which may harm our sales and operating results.

The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future, which could harm our revenue and gross profit.

Certain of the semiconductor products we develop and sell are used for high volume applications. As a result, the prices of those products have often decreased rapidly. Gross profit on our products may be negatively affected by, among other things, pricing pressures from our customers. We have reduced, and may in the future reduce, the average selling prices of our products in response to, or in anticipation of, future competitive pricing pressures, new product introductions by us or our competitors and other factors. In addition, some of our customer agreements provide for volume-based pricing and product pricing roadmaps, which can also reduce the average selling prices of our products over time. Our margins and financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing manufacturing costs, or developing new and higher value-added products on a timely basis.

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 market, existing competitors merge or form alliances, and new technologies emerge. Our competitors may introduce new solutions and technologies that are superior to our products, 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 products, 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 and bargaining 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 terms related to indemnification, intellectual property ownership and licensing. 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, loss of intellectual property rights or exclusive use of such rights, 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, including the Russian-Ukrainian conflict, 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.

RFMi relies on third parties, including third parties in countries outside the U.S., for its development and manufacturing activities.

Our subsidiary, RFMi, depends on various contractors for certain of its manufacturing and research and development activities. Specifically, RFMi's contract manufacturer, TST, produces the majority of products sold by RFMi. TST ships some products to RFMi for distribution to end customers and, in some cases, ships products directly to those customers. TST is located in Taiwan and therefore geopolitical changes in China-Taiwan relations could disrupt its operations, which would adversely affect RFMi's ability to manufacture certain products. Additionally, RFMi has outsourced some of their research and development activities to individuals located in Russia. As a result of the ongoing invasion of Ukraine by Russia, the U.S., other North Atlantic Treaty Organization member states, as well as non-member states, have implemented sanctions against Russia and certain Russian banks, enterprises and individuals. These, as well as any future additional sanctions and any resulting conflict between Russia and the U.S., could hinder RFMi's abilities to compensate its contractors located in Russia and restrict their abilities to continue working for RFMi, which could have an adverse effect on our business, financial condition and results of operations.

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 as well as China's data localization policies and measures, 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 Russia and in China. For example, beginning in May 2018, the U.S. 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, 2019. While the imposition of these tariffs did not have a direct, material adverse impact on our business during fiscal year ended June 30, 2022, 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, then-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, then-President Trump issued a similar executive order regarding potential foreign threats to the U.S. 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. More recently the Biden Administration has begun work on new outbound investment screening and export control initiatives related to technology transfers that could harm U.S. national security.

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.

We depend on a few large customers for a substantial portion of our revenue.

A substantial portion of our revenue comes from large purchases by a small number of customers. Our future operating results depend on both the success of our largest customers and on our success in diversifying our products and customer base.

The concentration of our revenue with a relatively small number of customers makes us particularly dependent on factors, both positive and negative, affecting those customers. If demand for their devices incorporating our products increases, our results are favorably impacted, while if demand for their devices decreases, they may reduce their purchases of, or stop purchasing, our products and our operating results would suffer. Even if we achieve a design win, our customers can delay, temporarily suspend, or cancel the manufacture or release of a new device for any reason, such as a shortage of supply of other components needed to manufacture their device. Most of our customers can cease incorporating our products into their devices with little notice to us and with little or no penalty. The loss of a large customer and failure to add new customers to replace lost revenue would have a material adverse effect on our business, financial condition and results of operations.

Global shortages in manufacturing capacities could negatively affect our operations and negatively impact our results of operations.

Our business depends in significant part upon manufacturers of products requiring semiconductors, as well as the current and anticipated production of these products. As a supplier to such manufacturers, we are subject to the business cycles that characterize the industry. Recent sharp increases in demand for semiconductor products have resulted in a global shortage of manufacturing capacities and it is unclear how long this shortage may last. If our customers are forced to reduce the amount of their products they manufacture or plan to manufacture due to a limited supply of semiconductors, our business, financial condition and results of operations could be negatively affected.

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 products,

- 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,
- inflation or a tightening of the credit markets
- 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 products,
- 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. Macroeconomic weakness and uncertainty also make it more difficult for us to accurately forecast revenue, gross margin and expenses, and may make it more difficult to raise or refinance debt. For example, an escalation of trade tensions between the U.S. and China has resulted in trade restrictions and increased tariffs that harm our ability to participate in Chinese markets or compete effectively with Chinese companies. Sustained uncertainty about, or worsening of, current global economic conditions and further escalation of trade tensions between the U.S. and its trading partners, especially China, and possible decoupling of the U.S. and China economies, could result in a global economic slowdown and long-term changes to global trade.

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 Chief Financial Officer, or our Executive Vice President of Business Development, 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.

If we are unable to establish effective marketing and sales capabilities or enter into additional agreements with third parties to market and sell our products, 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 products, 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 products. 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 products, 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 products. 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 one hundred seventeen pending patent applications as of August 31, 2022; 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 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 are and may in the future 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 file infringement claims from time to time, 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 word mark 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 and other suppliers may result in restrictions on jointly-developed intellectual property.

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

We are, and may become, 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 be named in lawsuits or 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.

On October 4, 2021, the Company was named as a defendant in a complaint filed by Qorvo, Inc. in the United States District Court for the District of Delaware alleging, among other things, patent infringement, false advertising, false patent marking, and unfair competition. The plaintiff seeks an injunction enjoining us from the alleged infringement and damages, including punitive and statutory enhanced damages, in an unspecified amount. The Company filed a motion to dismiss all of the claims other than the direct patent infringement claims, but the court permitted the plaintiff to file an amended complaint which the court subsequently determined was sufficient for pleading purposes. The Court dismissed the Company's motion in May 2022. We believe this lawsuit is without merit and intend to defend against it vigorously. However, we can provide no assurance as to the outcome of such dispute, and such action may result in judgments against us for an injunction, significant damages or other relief, such as future royalty payments to Qorvo, Inc. or restrictions on certain of our activities. Resolution of such matter may be prolonged and costly, and the ultimate result or judgment is uncertain due to the inherent uncertainty in litigation and other proceedings. Even if ultimately settled or resolved in our favor, this and other possible future actions may result in significant expenses, diversion of management and technical personnel attention and disruptions and delays in our business and product development, and other collateral consequences, all of which could have a material adverse effect on our business, financial condition and results of operations. Any out-of-court settlement of this or other actions may also have an adverse effect on our business, financial condition and results of operations, including, but not limited to, substantial expenses, the payment of royalties, licensing or other fees payable to third parties, or restrictions on our ability to develop, manufacture and sell our products.

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.

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.

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. Our filter business has incurred losses since its inception in May 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 products 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, we may become subject to 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.

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 offering we completed in June 2022, we incurred \$44.0 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 6.0% Convertible Senior Notes due 2027 is payable semi-annually 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.

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. Additionally, these rules and regulations may in the future be expanded such that they may have a greater effect on our business than they do currently.

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.

Our common stock has been thinly traded and its share price in the public markets has experienced, and may in the future experience, extreme volatility.

Our common stock has traded on the Nasdaq Capital Market, under the symbol “AKTS,” since March 13, 2017. Since that date, our common stock has been relatively thinly traded and at times been subject to price volatility. Recently, from July 1, 2021 to June 30, 2022, the closing price of our common stock on the Nasdaq Capital Market ranged from \$3.36 to \$10.79 per share.

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. Additionally, the stock market and development-stage public companies in particular have been subject to extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of such companies. Additionally, technical factors in the public trading market for our stock may produce price movements that may or may not comport with macro, industry or company-specific fundamentals, including, without limitation, the sentiment of retail investors (including as may be expressed on financial trading and other social media sites), speculation in the press, in the investment community, or on the internet, including on online forums and social media, about our Company, our industry or our securities, the amount and status of short interest in our securities (including a “short squeeze”), access to margin debt, trading in options and other derivatives on our common stock and other technical trading factors. We may incur rapid and substantial decreases in our stock price in the foreseeable future that are unrelated to our operating performance or prospects. There can be no guarantee that our stock price will remain at current prices or that future sales of our common stock will not be at prices lower than the sales price in this offering.

The daily trading volume of our common stock has historically been relatively low. If we are unable to develop and maintain a liquid market for our common stock, you may not be able to sell your common stock at prices you consider to be fair or at times that are convenient for you, or at all. This situation may be attributable to a number of factors, including but not limited to the fact that we are a development-stage 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 development-stage companies. The low trading volume is outside of our control and may not increase or, if it increases, may not be maintained. In addition, following periods of volatility in the market price of a company’s securities, litigation has often been brought against that company and we may become the target of litigation as a result of price volatility. Litigation could result in substantial costs and divert our management’s attention and resources from our business. This could have a material adverse effect on our business, results of operations and financial condition.

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 September 6, 2022, warrants and options to purchase 41,103 and 3,020,002 shares, respectively, of our Common Stock were outstanding. 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.

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.

General Risk Factors

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. Geopolitical instability, such as Russia's invasion of Ukraine, may increase the likelihood that we will experience direct or collateral consequences from cyber conflicts between nation-states or other politically motivated actors targeting critical technology infrastructure. 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.

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 products 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 products. 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.

Delaware law, our charter documents and the ability of our Board of Directors to issue additional stock 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.

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.

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 not 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 22,400 square feet, and its base rent is approximately \$22,000 per month with a term expiring February 2026. On June 26, 2017, the Company acquired a 120,000 square foot MEMS fabrication facility in Canandaigua, NY (the “NY Facility”). 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.

As part of the acquisition of RFMi, the Company assumed a lease in Carrollton, Texas. The lease covering this property is currently scheduled to expire in March 2025.

During the fourth quarter of fiscal year 2022, the Company entered into a new office lease located in Taiwan. The lease covering this property is currently scheduled to expire in May 2025.

The Company believes that its existing facilities 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 these or other matters may arise from time to time that may have an adverse effect on our business, financial condition or results of operations and prospects.

Except for the matter described under “Litigation, Claims and Assessments” in “Note 15 – Commitments and Contingencies” of the condensed consolidated financial statements in this Item 1 of Part I of this Annual Report on Form 10-K, which description is incorporated in this “Item 1. Legal Proceedings” by reference, 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 September 6, 2022, 57,204,697 shares of our Common Stock were issued and outstanding and were held by approximately 88 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, Options and Restricted Stock Units

As of June 30, 2022, there were outstanding warrants and options to purchase 41,103 shares of our Common Stock and 3,020,002 shares of our Common Stock, respectively. Additionally, there were outstanding 2,177,585 restricted stock units.

Equity Compensation Plan Information

The following table provides information as of June 30, 2022, 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	3,020,002(1)	\$ 6.95	845,013(3)
Equity compensation plans approved by security holders – restricted stock units	2,177,585(2)	\$ 0.00	-
Equity compensation plans not approved by security holders	-	-	-
Total	5,197,587		845,013(3)

- (1) Consists of (i) 130,000 shares of Common Stock issuable upon the exercise of outstanding options issued under the Company's 2015 Equity Incentive Plan (the "2015 Plan"), (ii) 824,502 issuable under the Company's 2016 Stock Incentive Plan (the "2016 Plan"), (iii) and 2,065,500 issuable under the Company's 2018 Stock Incentive Plan (the "2018 Plan").
- (2) Consists of 28,500 shares of Common Stock to be issued upon the vesting of outstanding restricted stock units issuable under the 2016 Plan (the "2016 Plan") and 2,149,085 issuable under the 2018 Plan.
- (3) As of June 30, 2022, 845,013 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, 2022 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.

ITEM 6. [RESERVED]

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 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 5G frequency bands and 5GHz and 6 GHz 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 XBAW 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.

Additionally, through RFMi, a wholly-owned subsidiary of Akoustis, Inc., the Company makes sales of complementary SAW resonators, RF filters, crystal (Xtal) resonators and oscillators, and ceramic products branded as "RFMi" products.

Please see Item 1. Business for more information.

Business Environment and Current Trends

Impact of COVID-19

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, including when warranted by state and local guidelines. 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.

These actions and the global health crisis caused by COVID-19 have negatively impacted business activity across the globe. We observed declining demand and price reductions in the electronics industry as business and consumer activity has decelerated. Additionally, COVID-19 has contributed to some of the delays we have observed in certain suppliers’ shipment of materials necessary for us to manufacture our products and in certain vendors’ ability to deliver equipment for installation at our facilities. In particular, the recent government-mandated COVID-19 containment measures, including mass quarantines, in China have impacted supply shipments and created ongoing risk and uncertainty. When COVID-19 is demonstrably contained, we anticipate that its effects on global commerce will subside; however, the timing and extent of this 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 ultimate 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 for fiscal year 2023 or beyond.

Semiconductor Shortages and Supply Chain Issues

The global silicon semiconductor industry is experiencing a shortage in supply and difficulties in ability to meet customer demand. This shortage has led to an increase in lead-times of production of semiconductor chips and components. As our business depends in significant part upon manufacturers of products requiring semiconductors, as well as the current and anticipated production of these products, we have sought to manage the impact of supply shortages though carefully maintaining and increasing key inventory levels. In some cases, we have incurred higher costs to secure available inventory, or have extended our purchase commitments or placed non-cancellable orders with suppliers, which introduces inventory risk if our forecasts and assumptions are inaccurate. We believe the global supply chain challenges and their adverse impact on our business and financial results will persist into calendar year 2023. We expect these constrained supply conditions to increase our costs of goods sold and increase uncertainty with respect to the timing of delivery of specific customer orders.

Critical Accounting Policies and Estimates

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.

Revenue Recognition

Application of the revenue recognition guidance requires a significant number of judgments and estimates, which may impact the amount and timing of revenue recognition and related disclosures. Refer to Note 3, “Summary of significant accounting policies” of our notes to consolidated financial statements included elsewhere in this Report for additional information regarding our revenue recognition policies, significant judgements, and estimates.

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 the Acquired Intangible Assets

We perform valuations of assets acquired and liabilities assumed on each acquisition accounted for as a business combination and allocate the purchase price of each acquired business to our respective assets and liabilities. Acquired intangible assets include developed technology, customer relationships and tradenames. We use various valuation techniques to value these intangibles assets, with the primary technique being a discounted cash flow analysis. A discounted cash flow analysis requires us to make various assumptions, estimates and judgements including projected revenue, gross margins, operating costs, growth rates, useful lives and discount rates. We believe our assumptions, estimates, and judgements to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates. Estimates associated with the accounting for acquisitions may change as additional information becomes available regarding the assets acquired and liabilities assumed. Intangible assets are amortized over their estimated useful lives using the straight-line method which approximates the pattern in which the economic benefits of such assets are expected to be consumed.

Results of Operations

Our results of operations are presented for the fiscal years ended June 30, 2022 and June 30, 2021.

Year Ended June 30, 2022 Compared to Year Ended June 30, 2021

Revenue

The Company recorded revenue of \$15.4 million for the year ended June 30, 2022 as compared to \$6.6 million for the year ended June 30, 2021. The increase of \$8.8 million was primarily due to an increase in RF product revenue of \$9.7 million or 258%, which includes revenue from sales of RFMi products. Partially offsetting this increase was a decrease in non-recurring engineering services of \$1.0 million.

Cost of Revenue

Cost of revenue includes direct labor, material, net realizable value (NRV) adjustments, and facility costs primarily associated with foundry services revenue, manufacturing of filter products and engineering services. The Company recorded cost of revenue of \$19.5 million for the year ended June 30, 2022 as compared to \$10.7 million for the year ended June 30, 2021. The \$8.8 million increase is primarily due to costs associated with RF product revenue which increased by \$7.9 million, which includes cost of revenue from sales of RFMi products.

Research and Development Expenses

R&D expenses were \$35.7 million for the year ended June 30, 2022 and were \$11.6 million, or 48% higher than the prior year amount for the same period of \$24.1 million. Personnel costs, including stock-based compensation, were \$18.1 million compared to \$13.1 million in the prior year period, an increase of \$5.0 million or 37.8%. Facility costs, including depreciation, of \$7.1 million primarily associated with the NY Facility were \$2.7 million higher than the prior period. Lastly, R&D material costs were \$4.2 million higher than the prior period.

General and Administrative Expense

General and administrative (“G&A”) expenses 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. G&A expenses for the year ended June 30, 2022 were \$20.7 million, which is an increase of \$7.4 million compared to the year ended June 30, 2021. Year-over-year changes within G&A expenses include an increase in employee compensation (including stock-based compensation) of \$2.5 million as well as increased general expenses of \$5.1 million, primarily professional fees and intangible amortization.

Other Income/(Expense)

Other expenses for the year ended June 30, 2022 were \$0.5 million compared to other expenses of \$2.8 million in fiscal year 2021. The \$2.3 million decrease was primarily due to a decrease in interest expense of \$5.1 million which was offset by a decrease in income related to forgiveness of debt of \$1.6 million and changes in contingent liabilities and derivative liabilities resulting in expense of \$1.1 million.

Net Loss

The Company recorded a net loss of \$59.0 million for the year ended June 30, 2022, compared to a net loss of \$44.2 million for the year ended June 30, 2021. The year-over-year incremental loss of \$14.9 million, or 33.7%, was primarily driven by an increase in cost of revenue of \$8.8 million, higher R&D and G&A personnel costs, including stock based compensation of \$7.5 million, an increase in R&D/Fabrication supplies of \$4.2 million, an increase in facility costs of \$2.7 million as well as increases in general expenses of \$4.9 million. These increases were partially offset by an increase in revenue of \$8.7 million and reduction of other expenses of \$2.3 million.

Liquidity and Capital Resources

Overview

The Company's short-term and long-term liquidity requirements primarily arise from funding (i) research and development expenses, (ii) general and administrative ("G&A") expenses including salaries, bonuses, commissions and stock-based compensation, (iii) working capital requirements, (iv) business acquisitions and investments we may make from time to time, including potential performance based payments related to our acquisition of RFMi, and (v) interest and principal payments related to our \$44.0 million aggregate principal amount of outstanding convertible notes. Additionally, in the near-term, the Company makes capital expenditures in connection with the expansion of the capacity of its manufacturing facility in Canandaigua, New York.

The Company has incurred losses and negative cash flow from operations since inception. 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. We expect our operating expenditures to continue to increase to support future growth of our manufacturing capabilities and expansion of our product offerings, as well as an increase in research and development and headcount costs to support this growth. We believe we currently have sufficient resources to fund operations and planned investments for at least the next twelve months. However, until we are able to generate sufficient cash flow from operations to achieve and maintain profitability and meet our obligations as they come due, we may need to raise additional capital to support our business. We recently completed an offering of convertible notes resulting in net proceeds to the Company of \$43.7 million and have access to an at-the-market offering program pursuant to which we may sell up to \$50 million of Common Stock. As of the date of this Annual Report, the Company had sold \$2.0 million of Common Stock under such at-the-market offering program and previously announced that it was suspending sales under the at-the-market offering program in light of market conditions. If, in the future, the Company determines to resume sales under the at-the-market offering program, it intends to notify investors by the filing of a Current Report on Form 8-K or other public announcement.

The Company had \$80.5 million of cash on hand as of June 30, 2022, which reflects a decrease of \$7.8 million compared to \$88.3 million as of June 30, 2021. The \$7.8 million decrease is primarily due to \$45.3 million of cash used in operating activities, cash used for purchases of machinery and equipment of \$27.7 million and cash used for investment in subsidiary of \$7.6 million. Offsetting these cash uses was cash proceeds from issuance of common stock of \$27.6 million and net received from convertible note issuance of \$43.7 million.

Financing Activities

On May 8, 2020, the Company entered into an ATM Equity OfferingSM Sales Agreement with BofA Securities, Inc. and Piper Sandler & Co. (each, a "Sales Agent" and, together, the "Sales Agents"), which was amended on February 19, 2021 (as amended, the "2020 Sales Agreement"). As of March 31, 2022, the Company had sold all \$100.0 million of its shares available to be sold pursuant to the 2020 Sales Agreement.

On May 2, 2022, the Company entered into an ATM Sales Agreement with Oppenheimer & Co. Inc., Craig-Hallum Capital Group LLC, and Roth Capital Partners, LLC 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 "2022 Equity Offering Program"). The Company announced on May 25, 2022 that it was suspending sales under the 2022 Equity Offering Program in light of the current market conditions. If, in the future, the Company determines to resume sales pursuant to the 2022 Equity Offering Program, it intends to notify investors by the filing of a Current Report on Form 8-K or other public announcement.

During the fiscal year ended June 30, 2022, the Company sold 4,178,318 shares of Common Stock under the 2020 Equity Offering Program and 2022 Equity Offering Program for proceeds of approximately \$28.2 million, net of approximately \$0.4 million of compensation paid to the sales agents, but excluding transaction expenses. These amounts include a total of 533,922 shares of the Company's common stock sold during the fiscal quarter ended June 30, 2022 under the 2022 Equity Offering Program at a weighted average price to the public of \$3.88 per share through the 2022 Equity Offering Program for aggregate net proceeds of approximately \$2.0 million, after deducting compensation paid to the sales agents of \$0.1 million and other expenses.

On June 9, 2022, the Company issued \$44.0 million aggregate principal amount of its 6.0% Convertible Senior Notes due 2027 (the "Notes") guaranteed by its wholly-owned subsidiary, Akoustis, Inc. The Notes were issued pursuant to an indenture (the "Indenture"), dated June 9, 2022, among the Company, the Guarantor and The Bank of New York Mellon Trust Company, N.A., as trustee. The Notes bear interest at a rate of 6.0% per year until maturity on June 15, 2027, payable semi-annually beginning on December 15, 2022. At the Company's option, interest may be paid in cash and/or shares of the Company's common stock. The initial conversion rate for the Notes is 212.3142 shares of common stock (subject to adjustment as provided in the Indenture) per \$1,000 principal amount of the Notes, which is equal to an initial conversion price of approximately \$4.71 per share.

Balance Sheet and Working Capital

June 30, 2022 Compared to June 30, 2021

As of June 30, 2022, the Company had current assets of \$91.7 million made up primarily of cash on hand of \$80.5 million. As of June 30, 2021, current assets were \$93.2 million comprised primarily of cash on hand of \$88.3 million.

Property, Plant and Equipment was \$51.2 million as of June 30, 2022 as compared to a balance of \$30.7 million as of the year ended June 30, 2021. The \$20.5 million year-over-year increase is primarily due to the purchase of equipment for the NY facility of \$27.4 million offset by depreciation of \$6.9 million.

Total assets as of June 30, 2022 and June 30, 2021 were \$161.3 million and \$125.0 million, respectively. The \$36.3 million increase is primarily due to an increase in property, plant and equipment as well as increase in intangible assets, including goodwill, related to the acquisition of RFMi.

Current liabilities as of June 30, 2022 were \$12.4 million and increased year-over-year by \$5.2 million which was primarily due to increases accounts payable and accrued expenses, primarily due to increases in production activities and, employee compensation accruals and professional fee accruals.

Long-term liabilities totaled \$45.5 million as of June 30, 2022, compared to \$0.3 million for the prior year period. The increase of approximately \$45 million was primarily due to the net proceeds from the issuance of the convertible debt of \$43.7 million.

Stockholders' equity was \$103.4 million as of June 30, 2022, compared to \$117.4 million as of June 30, 2021. Additional paid-in-capital ("APIC") was \$310.2 million as of June 30, 2022 and increased by \$45 million compared to June 30, 2021. The year-over-year increase was primarily due to an increase from net proceeds of \$27.6 million for the issuance of common stock during the year, common stock issued for services in the amount of \$10.2 million, and common stock issued for the acquisition of a subsidiary of \$6.2 million. The \$14.0 million decrease in stockholders' equity consisted of the \$45 million increase in APIC reduced by the \$59 million net loss recorded for the year ended June 30, 2022.

Cash Flow Analysis

Year Ended June 30, 2022 Compared to the Year Ended June 30, 2021

Operating Activities

Net cash used in operating activities was \$45.2 million during the year ended June 30, 2022 and \$29.4 million for the 2021 comparative period. The \$17.4 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.

Investing Activities

Net cash used in investing activities was \$34.9 million for the year ended June 30, 2022 compared to \$12.5 million for the comparative year ended June 30, 2021. The \$22.4 million year-over-year increase was primarily due to increased spend on R&D and manufacturing equipment of \$15.2 million and \$7.6 million in cash used for investment in subsidiary.

Financing Activities

Net cash provided by financing activities was \$72.3 million for the year ended June 30, 2022 versus \$85.8 million for the 2021 comparative period. The \$13.5 million decrease was due to a reduction in proceeds from issuance of common stock offset by an increase in proceeds from convertible debt compared to the prior period.

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

Not applicable

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

INDEX TO FINANCIAL STATEMENTS

	Page
<u>Report of Independent Registered Public Accounting Firm PCAOB ID#688</u>	F-2
<u>Consolidated Balance Sheets as of June 30, 2022 and June 30, 2021</u>	F-4
<u>Consolidated Statements of Operations for the years ended June 30, 2022 and 2021</u>	F-5
<u>Consolidated Statement of Changes in Stockholders' Equity for the years ended June 30, 2022 and 2021</u>	F-6
<u>Consolidated Statements of Cash Flows for the years ended June 30, 2022 and 2021</u>	F-7
<u>Notes to Consolidated Financial Statements</u>	F-8

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, 2022 and 2021, 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, 2022, 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, 2022 and 2021, and the results of its operations and its cash flows for each of the two years in the period ended June 30, 2022, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with 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 audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation of Customer Relationships Acquired in the Business Combination

Critical Audit Matter Description

As described in Note 7 to the financial statements, on October 15, 2021, the Company acquired a majority ownership interest in RFM Integrated Device, Inc. (“RFMi”) for \$6 million in cash and approximately \$2.3 million payable in common stock of the Company. As of the date of the acquisition, the Company recognized customer relationships acquired at an estimated fair value of \$7.5 million. As disclosed by management, the Company valued the acquired customer relationships utilizing the multi-period excess earnings method, a form of income approach. Determining the fair value of the customer relationships acquired required management to make significant judgments, including the revenue growth rate assumption, attrition rate, selling and marketing adjustment, and discount rate.

We identified the valuation of customer relationships acquired in the acquisition of RFMi as a critical audit matter due to the significant judgments made by management to estimate the fair value of the acquired customer relationships and the sensitivity of the fair value to the significant underlying assumptions, which include the revenue growth rate assumption, attrition rate, selling and marketing adjustment, and discount rate. These significant assumptions are forward looking and could be affected by future economic and market conditions. This in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating management’s fair value measurement of the acquired customer relationships.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the valuation of acquired customer relationships included the following, among others:

- We obtained an understanding of the design of controls associated with management’s process for estimating the fair value of the acquired customer relationships.
- We assessed the reasonableness of management’s projections by comparing the projection used to the historical financial results of the acquired business and certain peer companies.
- We evaluated the reasonableness of the attrition rate by assessing the underlying data used in determining the rate and testing mathematical accuracy of the calculation.
- We evaluated the reasonableness of the selling and marketing adjustment by assessing the underlying data used in determining the adjustment and testing mathematical accuracy of the calculation.
- With the assistance of our valuation specialists, we evaluated the reasonableness of the valuation methodology and the following significant valuation assumption:
 - Discount rate by testing the source information underlying the determination of the discount rate, testing mathematical accuracy of the calculation, and reconciling the weighted average cost of capital, weighted average return on assets and internal rate of return.

/s/ Marcum LLP
Marcum LLP

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

New York, NY
September 12, 2022

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

Assets	June 30, 2022	June 30, 2021
Assets:		
Cash and cash equivalents	\$ 80,485	\$ 88,322
Accounts receivable	3,793	1,170
Inventory	4,094	1,390
Other current assets	3,359	2,314
Total current assets	91,731	93,196
Property and equipment, net	51,157	30,730
Goodwill	8,051	—
Intangibles, net	8,994	572
Operating lease right-of-use asset, net	1,126	471
Other assets	279	25
Total Assets	\$ 161,338	\$ 124,994
Liabilities and Stockholders' Equity		
Current Liabilities:		
Accounts payable and accrued expenses	\$ 11,204	\$ 6,954
Contingent Consideration	855	—
Operating lease liability	313	270
Deferred revenue	286	41
Total current liabilities	12,658	7,265
Long-term Liabilities:		
Convertible notes payable, net	43,731	—
Contingent Consideration	591	—
Operating lease liability	811	202
Other long-term liabilities	117	117
Total long-term liabilities	45,250	319
Total Liabilities	57,908	7,584
Commitments and Contingencies (Note 15)		
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; 57,079,347 and 51,235,764 shares issued and outstanding at June 30, 2022 and June 30, 2021, respectively	57	51
Additional paid in capital	310,171	265,130
Accumulated deficit	(206,798)	(147,771)
Total Stockholders' Equity	103,430	117,410
Total Liabilities and Stockholders' Equity	\$ 161,338	\$ 124,994

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, 2022	For the Year Ended June 30, 2021
Revenue	\$ 15,350	\$ 6,618
Cost of revenue	<u>19,487</u>	<u>10,651</u>
Gross profit	<u>(4,137)</u>	<u>(4,033)</u>
Operating expenses		
Research and development	35,708	24,076
General and administrative expenses	<u>20,710</u>	<u>13,285</u>
Total operating expenses	<u>56,418</u>	<u>37,361</u>
Loss from operations	<u>(60,555)</u>	<u>(41,394)</u>
Other (expense) income		
Interest (expense) income	(77)	(5,130)
Change in fair value of contingent liability	(347)	—
Gain on extinguishment of debt	—	1,624
Change in fair value of derivative liabilities	(48)	744
Total Other (expense) income	<u>(472)</u>	<u>(2,762)</u>
Net loss before income taxes	<u>\$ (61,027)</u>	<u>\$ (44,156)</u>
Income taxes	<u>\$ (1,833)</u>	<u>—</u>
Net loss	<u>\$ (59,194)</u>	<u>\$ (44,156)</u>
Net (income) loss attributable to noncontrolling interest	167	—
Net Loss attributable to common stockholders	(59,027)	(44,156)
Net loss per common share - basic and diluted	<u>\$ (1.09)</u>	<u>\$ (1.02)</u>
Weighted average common shares outstanding - basic and diluted	<u>54,021,205</u>	<u>43,426,602</u>

See accompanying notes to the consolidated financial statements.

Akoustis Technologies, Inc.
Consolidated Statements of Changes in Stockholders' Equity
For the Years Ended June 30, 2022 and 2021
(In thousands)

	<u>Common Stock</u>		<u>Additional Paid In Capital</u>	<u>Accumulated Deficit</u>	<u>Total Akoustis Technologies, Inc. Equity</u>	<u>Noncontrolling Interest</u>	<u>Total Equity</u>
	<u>Shares</u>	<u>Par Value</u>					
Balance, June 30, 2020	37,990	\$ 38	\$ 145,072	\$ (103,615)	\$ 41,495	\$ —	\$ 41,495
Common stock issued for cash, net of issuance costs	7,056	7	83,066	—	83,073	—	83,073
Common stock issued in note conversion	4,984	5	25,265	—	25,270	—	25,270
Stock-based compensation	620	1	8,192	—	8,193	—	8,193
Common stock issued for exercise of warrants	219	—	1,109	—	1,109	—	1,109
Common stock issued for exercise of options	221	—	1,344	—	1,344	—	1,344
ESPP purchase	74	—	473	—	473	—	473
Common stock issued in payment of note interest	72	—	609	—	609	—	609
Net loss	—	—	—	(44,156)	(44,156)	—	(44,156)
Balance, June 30, 2021	51,236	\$ 51	\$ 265,130	\$ (147,771)	\$ 117,410	\$ —	\$ 117,410
Common stock issued for cash, net of issuance costs	4,178	4	27,574	—	27,578	—	27,578
Stock-based compensation	739	1	10,246	—	10,247	—	10,247
Common stock issued for exercise of warrants	21	—	67	—	67	—	67
Common stock issued for exercise of options	87	—	409	—	409	—	409
ESPP purchase	135	1	592	—	3	—	593
Common stock issued in acquisition	683	—	4,162	—	4,162	—	4,162
Noncontrolling interest acquired	—	—	1,991	—	1,991	167	2,158
Net loss	—	—	—	(59,027)	(59,027)	(167)	(59,194)
Balance, June 30, 2022	<u>57,079</u>	<u>\$ 57</u>	<u>\$ 310,171</u>	<u>\$ (206,798)</u>	<u>\$ 103,430</u>	<u>\$ —</u>	<u>\$ 103,430</u>

See accompanying notes to the consolidated financial statements.

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

	For the Year Ended June 30, 2022	For the Year Ended June 30, 2021
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	\$ (59,194)	\$ (44,156)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	7,853	4,655
Stock-based compensation	10,247	8,192
Amortization of debt discount	29	4,406
Non-cash interest payments	—	609
(Gain)/Loss on disposal of assets	(210)	—
Gain on extinguishment of debt	—	(1,624)
Change in fair value of derivative liabilities	—	(744)
Amortization of operating lease right of use asset	271	228
Change in fair value of derivative liabilities	48	—
Change in fair value of contingent consideration	347	—
Changes in operating assets and liabilities:		
Accounts receivable	(1,639)	(820)
Inventory	(2,506)	(1,254)
Other current asset	(1,241)	(905)
Other assets	(12)	257
Accounts payable and accrued expenses	2,975	1,983
Lease liabilities	(274)	(232)
Other long term liabilities	(1,980)	—
Deferred revenue	91	41
Net Cash Used in Operating Activities	(45,195)	(29,364)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Cash paid for machinery and equipment	(27,720)	(12,440)
Cash received from sale of fixed assets	357	—
Cash paid for investment in subsidiary	(7,579)	(51)
Net Cash Used in Investing Activities	(34,942)	(12,491)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from issuance of common stock	27,578	82,843
Proceeds from exercise of warrants	67	1,109
Proceeds from exercise of employee stock options	409	1,344
Proceeds from employee stock purchase plan	593	473
Proceeds received from convertible note, net of issuance costs	43,654	—
Net Cash Provided by Financing Activities	72,300	85,769
Net Increase (Decrease) in Cash, Cash Equivalents	(7,837)	43,914
Cash and Cash Equivalents - Beginning of Period	88,322	44,408
Cash and Cash Equivalents - End of Period	\$ 80,485	\$ 88,322
SUPPLEMENTARY CASH FLOW INFORMATION:		
Cash Paid During the Period for:		
Income taxes	\$ 112	\$ —
Interest	\$ —	\$ 325
SUPPLEMENTARY DISCLOSURE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:		
Common stock issued in note conversion	\$ —	\$ 25,270
Fixed assets included in accounts payable and accrued expenses	\$ (393)	\$ —
Stock issuance costs included in accounts payable and accrued expenses	\$ —	\$ (230)
Acquisition of Business		
Tangible assets, excluding cash and cash equivalents	\$ 1,346	—
Intangibles	\$ 9,452	—
Goodwill	\$ 8,051	—
Deferred Tax Liability	\$ (1,980)	—
Contingent consideration	\$ 1,099	—
Liabilities assumed	\$ (1,871)	—
Issuance of common stock for acquisition	\$ 4,162	—
Noncontrolling interest acquired	\$ (2,158)	—

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 subsidiaries, Akoustis, Inc. (a Delaware corporation) and RFM Integrated Device, Inc. (a Texas corporation) (“RFMi”), 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™ technology. Filters are critical in selecting and rejecting signals, and their performance enables differentiation in the modules defining the RFFE. Additionally, through RFMi, a wholly-owned subsidiary of Akoustis, Inc., the Company makes sales of complementary SAW resonators, RF filters, crystal (Xtal) resonators and oscillators, and ceramic products branded as “RFMi” products.

Note 2. Liquidity

As of June 30, 2022, the Company had cash and cash equivalents of \$80.5 million and working capital of \$79.5 million. The Company has historically incurred recurring operating losses and experienced net cash used in operating activities.

The Company expects its current cash and cash equivalents 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. Except for the \$48.0 million of common stock remaining available to be sold under its ATM Sales Agreement with Oppenheimer & Co. Inc., Craig-Hallum Capital Group LLC, and Roth Capital Partners, LLC, the Company has no commitments or arrangements 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 subsidiaries, Akoustis, Inc and RFM Integrated Device, 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). The policies, estimates and assumptions include estimates and assumptions used in valuation of equity instruments, deferred taxes and related valuation allowances, contingent consideration, goodwill, fair value of the acquired intangible assets, initial fair value of the non-controlling interest, revenue recognition, derivative liabilities, and the fair values of long-lived assets. Actual results could differ from the 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, 2022, approximately \$80.5 million was uninsured.

Accounts Receivable

Accounts receivable is recorded at the invoiced amount and do not bear interest. The Company maintains an allowance for doubtful accounts for estimated losses inherent in its accounts receivable portfolio. Management considers an account receivable to be past due when it is not settled under its stated terms. In establishing the required allowance, management considers historical losses adjusted to take into account current market conditions and customers financial condition, the amount of receivables in dispute, and the current receivables aging and current payment patterns. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote. During the years ended June 30, 2022 and 2021, the Company's allowance for doubtful accounts was immaterial. The Company does not have any off balance sheet credit exposure related to its customers.

Inventory, net

Inventory, which consists of raw materials, work-in-process and finished product, is stated at the lower of cost or net realizable value. Inventory is valued on a first-in first-out basis. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation.

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.

Leases

The Company determines if an arrangement is a lease at inception. For each lease, the lease term is determined at the commencement date and includes renewal options and termination options when it is reasonably certain that the Company will exercise that option. Operating leases with the lease terms greater than one year are included in operating lease right-of-use (“ROU”) assets and current and long-term operating lease liabilities in the Company’s consolidated balance sheets.

Operating lease ROU assets represent the right to use an underlying asset for the lease term and lease liabilities represent the obligation to make lease payments arising from the lease. Operating lease liabilities are recognized at commencement date based on the present value of lease payments over the lease term using an estimated rate of interest the Company would have to pay to borrow equivalent funds on a collateralized basis at the lease commencement date. The operating lease ROU assets are based on the liability adjusted for any prepaid or deferred rent and lease incentives. The incremental borrowing rate was utilized to discount lease payments over the expected term given that the Company’s operating leases do not provide an implicit rate. The Company estimates the incremental borrowing rate to reflect the profile of secured borrowing over the expected term of the leases based on the information available at the later of the date of adoption or the lease commencement date. Rent expense for the operating lease is recognized on a straight-line basis over the lease term.

Business Combinations

The Company uses the acquisition method of accounting for business combinations and recognizes assets acquired and liabilities assumed at their fair values on the date acquired. Goodwill represents the excess of the purchase price over the fair value of the acquired identifiable net assets. The fair values of the assets and liabilities acquired are determined based upon the Company’s valuation using a combination of market, income, or cost approaches. The valuation involves making significant estimates and assumptions, which are based on detailed financial models including the projection of future cash flows and the weighted average cost of capital.

Contingent Consideration

Contingent consideration relates to the potential payment for an acquisition that is contingent upon the achievement by the acquired business of revenue targets. The Company records contingent consideration at fair value based on the consideration expected to be transferred. For potential payments related to revenue target achievements, the Company estimated the fair value based on the probability of achievement of such revenue targets. The assumptions utilized in the calculation of the fair value include the probability assessments of expected future sales revenue of RFMi products in each of calendar year 2022 and 2023 and the volatility of those revenues, appropriately discounted considering the uncertainties associated with the obligation. Contingent consideration is remeasured each reporting period, and subsequent changes in fair value are recognized within other (expense) income in the Company’s Statement of Operations.

Goodwill and Intangible assets, net

Goodwill is the excess of purchase price over the fair value of identified net assets of businesses acquired. The Company has two operating segments and two reporting units. The Company reviews goodwill at least annually for possible impairment and will test for impairment between annual tests if an event occurs that would more likely than not reduce the fair value of the reporting unit below its carrying value. No impairment charge was recognized for the year ended June 30, 2022.

Intangible assets consist of developed technology, trademarks, and customer relationships. 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. Developed technology is amortized using the straight-line method over their weighted average useful lives of 10 years, trademarks are amortized using the straight-line method over their useful lives of 5 years and customer relationships are amortized using the straight-line method over their useful lives of 7 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 accounted for separately. The fair value of any identified 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.

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 analyzes whether an instrument (or an embedded feature) is indexed to the Company's own stock and uses 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.

Revenue Recognition

The Company derives its revenue primarily from the sale of filter products under individual customer purchase orders, some of which have underlying master sales agreements that specify terms governing the product sales. In the absence of a sales agreement, the Company's standard terms and conditions apply. Revenue is recognized when control of the promised goods or services is transferred to the Company's customers, in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. The Company applies a five-step approach as defined in FASB ASC 606, Revenue from Contracts with Customers (Topic 606), in determining the amount and timing of revenue to be recognized: (1) identifying the contract with a customer; (2) identifying the performance obligations in the contract; (3) determining the transaction price; (4) allocating the transaction price to the performance obligations in the contract; and (5) recognizing revenue when the corresponding performance obligation is satisfied.

Each distinct promise to transfer products is considered to be an identified performance obligation for which revenue is recognized at a point in time upon transfer of control of the products to the customer. Transfer of control occurs upon shipment to the distributor or direct customer. Returns under the Company's general assurance warranty of products have not been material, and warranty-related services are not considered a separate performance obligation.

Pricing adjustments and estimates of returns are treated as variable consideration for purposes of determining the transaction price. Sales returns are generally accepted at the Company's discretion. Variable consideration is estimated using the expected value method considering all reasonably available information, including the Company's historical experience and its current expectations, and is reflected in the transaction price when sales are recorded. The Company records net revenue excluding taxes collected on its sales to trade customers.

Accounts receivable represents the Company's unconditional right to receive consideration from its customer. Substantially all payments are collected within the Company's standard terms, which do not include a significant financing component. To date, there have been no material impairment losses on accounts receivable.

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.

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*" based on estimated fair values. The fair value of share-based payment awards is amortized over the requisite service period, which is defined as the period during which an employee is required to provide service in exchange for an award. The Company recognizes the expense for the awards ratably over the service period for each separately vesting tranche.

Awards granted by the Company generally vest over the requisite service periods, typically over a four-year or five-year period. Awards granted to non-employee directors generally vest over a one-year period from the grant date.

The fair value of a restricted stock award is equal to the fair market value of a share of Company stock on the date of grant.

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 over the expected term. Risk-free interest rates are calculated based on continuously compounded risk-free rates for the appropriate term. The expected life of the option is calculated under the simplified method. 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 has elected 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

The Company accounts for income taxes using the asset and liability approach. Deferred tax assets and liabilities are recognized and represent the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. They are measured using the enacted tax rates expected to apply to taxable income in the years in which the related temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. The Company recognizes interest and penalties related to uncertain tax positions in selling, general and administrative expenses.

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 assesses 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.

Recently Issued Accounting Pronouncements

In December 2019, the Financial Accounting Standards Board issued Accounting Standards Update 2019-12, "Simplifying the Accounting for Income Taxes," which eliminated certain exceptions within ASC 740, "Income Taxes" and clarified and simplified other aspects of the current accounting guidance. The Company adopted this standard in the first quarter of fiscal 2022, and it did not have a material impact on the Company's consolidated financial statements.

In August 2020, the Financial Accounting Standards Board issued Accounting Standards Update 2020-06, "Accounting for Convertible Instruments and Contracts in an Entity's Own Equity", which simplifies accounting for convertible instruments by removing major separation models required under current Generally Accepted Accounting Principles (GAAP). In addition, the ASU "removes certain settlement conditions that are required for equity contracts to qualify for the derivative scope exception, which will permit more equity contracts to qualify for it" and "simplifies the diluted earnings per share (EPS) calculation in certain areas. The guidance is effective for fiscal years beginning after December 15, 2021 and interim periods therein, with early adoption permitted. The Company early adopted this standard in the first quarter of fiscal 2022, and it did not have a material impact on the Company's consolidated financial statements.

Note 4. Revenue Recognition from Contracts with Customers

Disaggregation of Revenue

The Company's primary revenue streams include foundry fabrication services and product sales across multiple geographic regions primarily Americas, Asia and Europe.

Foundry Fabrication Services

Foundry fabrication services revenue includes microelectromechanical systems ("MEMS") foundry services, which the Company exited in fiscal year 2021, 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 by geographic region for the year ended June 30, 2022, (in thousands):

	Foundry Fabrication Services Revenue	Product Sales Revenue	Total Revenue with Customers
Americas	1,389	2,388	3,777
Asia	484	8,146	8,630
Europe	—	2,930	2,930
Other	—	13	13
Total	<u>\$ 1,873</u>	<u>\$ 13,477</u>	<u>\$15,350</u>

The following table summarizes the revenues of the Company's reportable segments for the year ended June 30, 2021, (in thousands):

	Foundry Fabrication Services Revenue	Product Sales Revenue	Total Revenue with Customers
Americas	569	349	918
Asia	368	3,312	3,680
Europe	1,911	109	2,020
Total	<u>\$ 2,848</u>	<u>\$ 3,770</u>	<u>\$6,618</u>

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.

The following table summarizes the changes in the opening and closing balances of the Company's contract asset (included in Other current assets on the Consolidated Balance Sheet) and contract liability (included as Deferred revenue on the Consolidated Balance Sheet) for the years ended June 30, 2022 and 2021 (in thousands):

	Contract Assets	Contract Liabilities
Balance, June 30, 2021	\$ 411	\$ 41
Closing, June 30, 2022	923	286
Increase/(Decrease)	512	245
Balance, June 30, 2020	\$ 125	\$ —
Closing, June 30, 2021	411	41
Increase/(Decrease)	286	41

The amount of revenue recognized in the year ended June 30, 2021 that was included in the opening contract liability balance consisted of \$41 thousand that related to filter product sales.

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, 2022 that was included in the opening contract asset balance was \$411 thousand, which primarily related to non-recurring engineering 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 \$8.0 million as of June 30, 2022.

Note 5: Inventory, net

Inventory, net of reserves, consisted of the following as of June 30, 2022 and June 30, 2021 (in thousands):

	June 30, 2022	June 30, 2021
Raw Materials	\$ 1,077	\$ 124
Work in Process	1,061	1,188
Finished Goods	1,956	78
Total Inventory	\$ 4,094	\$ 1,390

Note 6. Property and equipment

Property and equipment consisted of the following as of June 30, 2022 and 2021 (in thousands):

	June 30, 2022	June 30, 2021	Estimated Useful Life
Land	\$ 1,000	\$ 1,000	n/a
Building	3,000	3,000	11 years
Equipment	57,750	35,120	2-10 years
Leasehold Improvements	4,715	1,946	*
Computer equipment and software	1,966	963	3-5 years
Total	68,431	42,029	
Less: Accumulated depreciation	(17,274)	(11,299)	
Total	\$ 51,157	\$ 30,730	

(*) 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 \$6.8 million and \$4.6 million for the years ended June 30, 2022 and 2021, respectively.

As of June 30, 2022, equipment with a net book value totaling \$14.5 million had not been placed in service and therefore was not depreciated during the period. As of June 30, 2021, fixed assets with a net book value totaling \$4.9 million had not been placed in service and therefore was not depreciated during the period.

Note 7. Business Acquisition

On October 15, 2021, the Company acquired a majority ownership position in RFM Integrated Device, Inc. (“RFMi”), a fabless supplier of acoustic wave RF resonators and filters, to expand product offerings and provide access to new markets. The Company acquired a 51% ownership interest in RFMi from Tai-Saw Technology Co., Ltd. (“TST”) in exchange for \$6.0 million in cash and approximately \$2.3 million payable in common stock of the Company. On April 29, 2022, the Company exercised its option to acquire the remaining 49% ownership interest in RFMi from TST for an additional \$3.5 million in cash and approximately 420,053 shares of common stock of the Company with a fair value at closing of \$1.9 million.

Additionally, earn-out payments payable in cash and/or shares of common stock of the Company may be payable to TST based on the achievement of sales targets for RFMi products in each of calendar year 2022 and 2023, with potential payouts in the range of \$0 to \$3.0 million. The estimated fair value of the associated liability was based on the present value of the expected future payouts resulting from the projected RFMi product sales, applying a volatility rate of 30% against those future projected revenues and using a discount rate of 9.9% and 10.2% for the first and second earnouts, respectively, and thus represented a Level 3 fair value measurement. The contingent consideration is re-measured to fair value at each reporting date until the contingency is resolved, and those changes in fair value are recognized in earnings. The fair value of the contingent consideration increased \$347 thousand during the year ended June 30, 2022.

The purchase price was allocated based on the estimated fair values of the assets acquired and liabilities assumed as follows (in thousands):

Consideration:	
Cash paid	\$ 9,500
Common stock	4,162
Fair value of contingent consideration	1,099
Total consideration	<u>\$ 14,761</u>
Cash	\$ 1,921
Other tangible assets	1,346
Intangible assets	9,452
Goodwill	8,051
Liabilities assumed	(1,871)
Deferred tax liability	(1,980)
Noncontrolling interest acquired	\$ (2,158)
Total assets acquired	<u>\$ 14,761</u>

The Company will continue to evaluate the fair market value and other estimates of certain assets, liabilities and tax estimates over the measurement period (up to one year from the acquisition date) as provided for in ASC 805-10.

The fair value of the trademarks acquired was determined based on an income approach using the “relief-from-royalty” method which estimated the value of the intangible asset by discounting the future cash flows of the asset to present value. Key inputs include a royalty rate of 3% and a discount rate of 18.0% as of the valuation date. The acquired trademarks assets are being amortized on a straight-line basis over their estimated useful lives of five years.

The fair value of the developed technology acquired was determined based on an income approach using the “relief-from-royalty” method which estimated the value of the intangible asset by discounting the future cash flows of the asset to present value. Key inputs include a royalty rate of 4% and a discount rate of 18.0% as of the valuation date. The acquired developed technology assets are being amortized on a straight-line basis over their estimated useful lives of seven years.

The fair value of the customer relationships acquired was determined based on an income approach using the “multi-period excess earnings” method in which the value of the intangible asset is determined by discounting the future cash flows of the asset to present value. Key inputs include a discount rate of 18.0%, an attrition rate of 5% and an operating expense adjustment factor of 5% as of the valuation date. These customer relationships are being amortized on a straight-line basis over their estimated useful life of seven years.

The fair value of the noncontrolling interest was determined by applying a lack of control discount of 16.7% to the implied fair value based on the total consideration paid for the 51% ownership.

The goodwill resulting from the acquisition of RFMi, which has been recorded in the RF Product segment, is attributed to synergies and other benefits that are expected to be generated from this transaction and is not deductible for income tax purposes. During the year ended June 30, 2022, the Company recorded acquisition costs associated with the acquisition of RFMi totaling \$0.1 million in “General and administrative expenses” in the Condensed Consolidated Statements of Operations.

Revenues included in the consolidated statement of operations for the year ended June 30, 2022 from this acquisition for the period subsequent to the closing of the transaction was approximately \$5.7 million. Loss from operations included in the consolidated statement of operations for the year ended June 30, 2022 from this acquisition for the period subsequent to the closing of the transaction was approximately \$0.4 million. Also included in the loss from operations in the year ended June 30, 2022 is expense of approximately \$347 thousand relating to adjustments to the fair value of earnout contingent consideration described below.

Pro Forma Results

The following unaudited pro forma financial information summarizes the results of operations for year ended June 30, 2021 and 2022, as if the acquisitions had been completed as of July 1, 2020 (in thousands). The pro forma results were calculated applying the Company’s accounting policies and include the effects of adjustments related to the amortization charges from the acquired intangibles. The unaudited pro forma information does not purport to be indicative of the results that would have been obtained if the acquisitions had actually occurred at the beginning of the year prior to acquisition, nor of the results that may be reported in the future.

	Years Ended	
	June 30,	
	2022	2021
	Unaudited Proforma	Unaudited Proforma
Revenues	\$ 17,405	\$ 11,074
Net Loss	\$ (59,470)	\$ (45,141)
Net Loss per share	\$ (1.09)	\$ (1.02)

Note 8: Goodwill

We perform an annual test for goodwill impairment during our last fiscal quarter. Based on our qualitative assessment, we have determined that there was no impairment to our goodwill as of June 30, 2022. We will also test for impairment between annual test dates if an event occurs or circumstances change that would indicate the carrying amount may be impaired.

During the year ended June 30, 2022, we did not identify any events or circumstances that would require an interim goodwill impairment test. We do not amortize goodwill as it has been determined to have an indefinite useful life. The carrying amount of goodwill as of June 30, 2022 was \$8.1 million.

Note 9: Intangible Assets

Intangible assets consisted of the following as of June 30, 2022 (in thousands):

	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Useful Life in Years
Trademarks	\$ 702	\$ (99)	\$ 603	5
Developed Technology	\$ 1,911	\$ (221)	\$ 1,690	10
Customer Relationships	\$ 7,455	\$ (754)	\$ 6,701	7
Total	\$ 10,068	\$ (1,074)	\$ 8,994	

Intangible assets consisted of the following as of June 30, 2021 (in thousands):

	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Useful Life in Years
Developed Technology	\$ 634	\$ (62)	\$ 572	15

Amortization expense totaled \$1 million for the year ended June 30, 2022. Estimated future amortization expense of intangible assets for each of the next five fiscal years and thereafter are as follows (in thousands):

2023	\$ 1,431
2024	\$ 1,431
2025	\$ 1,431
2026	\$ 1,431
2027	\$ 1,332
Thereafter	\$ 1,938
Total	\$ 8,994

Note 10. Accounts payable and accrued expenses

Accounts payable and accrued expenses consisted of the following at June 30, 2022 and June 30, 2021 (in thousands):

	June 30, 2022	June 30, 2021
Accounts payable	\$ 3,630	\$ 1,188
Accrued salaries and benefits	4,641	4,415
Accrued good received not invoiced	1,472	761
Other accrued expenses	1,461	590
Totals	\$ 11,204	\$ 6,954

Note 11. Notes Payable

Convertible Senior Notes due 2027

The following table summarizes convertible debt as of June 30, 2022 (in thousands):

	<u>Maturity Date</u>	<u>Stated Interest Rate</u>	<u>Conversion Price</u>	<u>Face Value</u>	<u>Remaining Debt (Discount)</u>	<u>Fair Value of Embedded Derivatives</u>	<u>Carrying Value</u>
Long Term convertible notes payable							
6.0% convertible senior notes	06/15/2027	6.00%	\$ 4.71	\$ 44,000	\$ (3,297)	\$ 3,028	\$ 43,731
Ending Balance as of June 30, 2022				<u>\$ 44,000</u>	<u>\$ (3,297)</u>	<u>\$ 3,028</u>	<u>\$ 43,731</u>

On June 9, 2022, Akoustis Technologies, Inc. (the “Company”) issued \$44.0 million aggregate principal amount of its 6.0% Convertible Senior Notes due 2027 (the “Notes”) guaranteed by its wholly-owned subsidiary, Akoustis, Inc. (the “Guarantor”).

The Notes were issued pursuant to an indenture (the “Indenture”), dated June 9, 2022, among the Company, the Guarantor and The Bank of New York Mellon Trust Company, N.A., as trustee. The Notes bear interest at a rate of 6.0% per year until maturity on June 15, 2027 (the “Maturity Date”). Interest on the Notes accrues from the date of issuance or from the most recent date to which interest has been paid and is payable semi-annually in arrears on June 15 and December 15 of each year, beginning on December 15, 2022. At the Company’s option, interest may be paid in cash and/or freely tradable shares of the Company’s common stock, subject to certain limitations, valued at 95% of the volume weighted average price of the common stock for the ten trading days ending on and including the trading day immediately preceding the interest payment date. The Company will settle conversions of the Notes through delivery of shares of common stock of the Company in accordance with the terms of the Indenture. The initial conversion price for the Notes is approximately \$4.71 per share.

Conversion

On or after December 9, 2022, holders of the Notes may convert all or any portion of their Notes, in multiples of \$1,000 principal amount, at their option at any time prior to the close of business on the business day immediately preceding the Maturity Date. If any Notes are converted prior to June 9, 2025 (the “Interest Make-Whole Date”), the Company will make a payment to the holder of such Notes equal to the sum of the remaining scheduled payments of interest that would have been made on the Notes to be converted had such Notes remained outstanding from the conversion date through and including the Interest Make-Whole Date. The Company will have the option to pay such Interest Make-Whole Payment in cash and/or common stock, subject to certain limitations, valued at 95% of the volume weighted average price of the common stock for the ten trading days ending on and including the trading day immediately preceding the redemption date.

Issuer Redemption

The Company may redeem the Notes, in whole or in part, at any time and from time to time on or after June 9, 2023 at a redemption price equal to 100% of the principal amount plus accrued and unpaid interest on such principal, if any, up to the redemption date. The Notes will become subject to the Company's right to redeem as follows: (i) on or after June 9, 2023, up to one-third of the aggregate principal amount of the Notes initially issued; (ii) on or after June 9, 2024, up to two-thirds of the aggregate principal amount of the Notes initially issued; and (iii) on or after June 9, 2025, up to 100% of the aggregate principal amount of the Notes initially issued; provided, that at any time the Company exercises the redemption right, (1) the closing sale price per share of the Company's common stock is greater than 150% of the then-effective conversion price for each of 20 consecutive days of the 30 consecutive trading day period immediately preceding the Company's redemption notice and (2) a registration statement registering the resale of all shares of common stock into which the principal amount of the Notes is convertible and all shares of common stock issuable as interest or as Interest Make-Whole Payments upon conversion or redemption of any Notes is effective and a current prospectus related thereto remains available throughout the period from the date the redemption notice is delivered to the holders to and including the redemption date. If the Company redeems the Notes prior to the Interest Make-Whole Date, the holder will also receive an interest make-whole payment equal to the remaining scheduled interest payments that would have been made on the notes redeemed had such notes remained outstanding through the Interest Make-Whole Date (an "Interest Make-Whole Payment"). The Company will have the option to pay such Interest Make-Whole Payment in cash and/or common stock, subject to certain limitations, valued at 95% of the volume weighted average price of the common stock for the ten trading days ending on and including the trading day immediately preceding the redemption date.

Fundamental Change

If the Company undergoes a "qualifying fundamental change," as defined in the Indenture, under certain circumstances holders who convert their Notes in connection with such a qualifying fundamental change will be entitled to receive, at each holder's option either (i) a "qualifying fundamental change payment" with respect to such converted Notes based on a make-whole table set forth in the Indenture, or (ii) if greater, the amount of any Interest Make-Whole Payment due in respect of the converted Notes. Subject to certain limitations, qualifying fundamental change payments will be made all in shares of common stock unless the Company gives written notice to the Note holders that it intends to make such payments either all or partially in cash. For purposes of determining any cash payment to be made in respect of a qualifying fundamental change payment, each share of common stock will be valued at 95% of the "Stock Price" (as determined in accordance with the Indenture).

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 \$3.0 million was recorded as a debt discount and will be adjusted to fair value at the end of each future reporting period. The Company recorded total debt discount and debt issuance costs of \$3.3 million, to be amortized over five years using an effective interest method. Debt discount and debt issuance costs include the fair value of the embedded features at the issuance date of \$3.0 million and debt issuance costs paid totaling \$0.3 million.

Interest expense on the Notes during the year ended June 30, 2022 included contractual interest of \$154 thousand and debt discount amortization of \$29 thousand.

Loans Payable

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 provided for a loan in the principal amount of \$1.6 million pursuant to the Paycheck Protection Program (the "PPP") under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"). On April 9, 2021, Akoustis, Inc. received notice from the Lender that the full amount of the Promissory Note was forgiven pursuant to the PPP. The Company recorded approximately \$1.6 million of debt extinguishment gain as a result of this forgiveness during the year ended June 30, 2021.

Note 12. Concentrations

Customers

Customer concentration as a percentage of revenue for the years ended June 30, 2022 and 2021 are as follows:

	Year Ended 06/30/2022	Year Ended 06/30/2021
Customer 1	26%	47%
Customer 2	10%	—
Customer 3	—	29%

Customer concentration as a percentage of accounts receivable for the years ended June 30, 2022 and 2021 are as follows:

	Year Ended 06/30/2022	Year Ended 06/30/2021
Customer 1	25%	63%
Customer 2	—	21%
Customer 3	—	12%

Note 13. Stockholders' Equity

Equity Issuances

On May 8, 2020, the Company entered into an ATM Equity OfferingSM Sales Agreement with BofA Securities, Inc. and Piper Sandler & Co., which was amended on February 19, 2021, (the "Sales Agreement") pursuant to which the Company may sell from time-to-time shares of its common stock having an aggregate offering price of up to \$100,000,000 (the "2020 Equity Offering Program").

On May 2, 2022, the Company entered into an ATM Sales Agreement with Oppenheimer & Co. Inc., Craig-Hallum Capital Group LLC, and Roth Capital Partners, LLC 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 "2022 Equity Offering Program").

The following table summarizes sales through the 2020 Equity Offering Program and the 2022 Equity Offering Program during the year ended June 30, 2022:

Three months ended	Avg price per share	Number of Shares	Gross Proceeds (in millions)	Offering Expenses (in millions)	Net Proceeds (in millions)
September 30, 2021	\$ 9.99	555,455	\$ 5.5	\$ 0.1	\$ 5.4
December 31, 2021	\$ 7.04	1,931,022	\$ 13.6	\$ 0.2	\$ 13.4
March 31, 2022	\$ 6.03	1,157,919	\$ 7.0	\$ 0.2	\$ 6.8
June 30, 2022	\$ 3.88	533,922	\$ 2.1	\$ 0.1	\$ 2.0
Total fiscal year ended June 30, 2022	\$ 6.75	4,178,318	\$ 28.2	\$ 0.6	\$ 27.6

The following table summarizes sales through the 2020 Equity Offering Program during the year ended June 30, 2021:

Three months ended	Avg price per share	Number of Shares	Gross Proceeds (in millions)	Offering Expenses (in millions)	Net Proceeds (in millions)
September 30, 2020	\$ 8.09	416,221	\$ 3.4	\$ 0.1	\$ 3.3
December 31, 2020	\$ 8.93	2,296,023	\$ 20.5	\$ 0.4	\$ 20.1
March 31, 2021	\$ 14.99	2,082,148	\$ 31.2	\$ 0.5	\$ 30.7
June 30, 2021	\$ 10.01	762,197	\$ 7.6	\$ 0.1	\$ 7.5
Total fiscal year ended June 30, 2021	\$ 11.28	5,556,589	\$ 62.7	\$ 1.1	\$ 61.6

February 2021 Registered Direct Offering

On February 19, 2021, the Company entered into securities purchase agreements to sell a total of 1,500,000 shares of its common stock to a limited number of institutional investors in a registered direct offering at a purchase price of \$14.3592 per share for aggregate gross proceeds of \$21.5 million. The offering closed on February 23, 2021.

Equity incentive plans

On November 1, 2018, the Board of Directors adopted, and on the same date approved, the Company's 2018 Stock Incentive Plan (as amended, the "2018 Plan"), which authorizes the grant to participants of nonqualified stock options, incentive stock options, restricted stock awards, restricted stock units, performance grants and other stock awards. 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, 2022, 845,013 shares remained available for future grants under the 2018 Plan. The Company previously maintained the 2015 Equity Incentive Plan (the "2015 Plan") and the 2016 Stock Incentive Plan (the "2016 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 assumptions:

	June 30, 2022	June 30, 2021
Exercise price	\$ 3.79 - \$10.15	\$ 7.72- \$17.61
Expected term (years)	4.75 - 5.00	4.00 - 5.00
Risk-free interest rate	0.76 - 3.38%	0.25 - 0.78%
Volatility	66 - 67%	67 - 68%
Dividend yield	0%	0%
Weighted Average Grant Date Fair Value of Options granted during the period		\$ 8.49

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, 2021	2,497,577	6.49		
Granted	712,300	8.49		
Exercised	(87,263)	4.69		
Forfeited/Cancelled	(102,612)	8.55		
Outstanding – June 30, 2022	3,020,002	6.95	4.20	286
Exercisable – June 30, 2022	1,707,578	5.94	3.11	286

The total intrinsic value of options exercised during the fiscal years ended June 30, 2022 and June 30, 2021 was \$286 thousand and \$1,509 thousand, respectively.

As of June 30, 2022, the Company has \$3.2 million in unrecognized stock-based compensation expense attributable to the outstanding options, which will be amortized over a period of 2.4 years.

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

	As of June 30, 2022	
	Unrecognized stock-based compensation	Weighted-average years to be recognized
Options	\$ 3,224	2.41
Restricted stock awards/units	\$ 9,286	2.23

For the years ended June 30, 2022 and 2021, the Company recorded \$10.2 million and \$8.2 million, respectively, in stock-based compensation which is reflected in total operating expenses in the consolidated statements of operations as follows (in thousands):

	2022	2021
Research and Development	\$ 5,586	\$ 4,037
General and Administrative	4,661	4,155
Total	\$ 10,247	\$ 8,192

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, 2022 and changes during the year ended is as follows:

	Number of RSAs/RSUs	Weighted Average Fair Value per Share/Unit
Outstanding - June 30, 2021	1,707,608	\$ 8.45
Granted	1,240,510	8.16
Vested	(686,233)	8.23
Forfeited/Cancelled/Repurchased	(124,300)	9.42
Outstanding – June 30, 2022	2,177,585	8.30

The weighted average grant date fair value per share for awards granted during the fiscal years ended June 30, 2022 and June 30, 2021 was \$8.16 and \$9.77, respectively. The total fair value of restricted awards that vested during the fiscal years ended June 30, 2022 and June 30, 2021 was \$5.1 million and \$6.9 million, respectively.

During the years ended June 30, 2022 and 2021, the Company recorded stock-based compensation expense of \$7.7 million and \$6.1 million, respectively related to the RSAs and RSUs that have been issued to date.

As of June 30, 2022, the Company had approximately \$9.3 million in unrecognized stock-based compensation expense related to the unvested shares.

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, 2022, 0.21 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 0.14 million, and 0.07 million shares under the ESPP in fiscal years 2022 and 2021, respectively. The Company settles awards issued under the ESPP with newly issued common shares.

For the years ended June 30, 2022 and 2021, the Company recorded \$0.25 million and \$0.17 million, respectively, in stock-based compensation related to grants of ESPP shares.

Note 14. Leases

The Company leases office space in Huntersville, NC, Carrollton, Texas and Taiwan and leases equipment in Canandaigua, NY. During the fourth quarter 2022, the Company determined that it is reasonably certain that it will exercise its option to extend its leases in both Huntersville, NC and Carrollton, Texas for an additional three years which resulted in the remeasurement of its right of use asset and corresponding right of use liability. In addition, a new lease for office space in Taiwan was executed resulting in the initial measurement of the related right of use asset and liability.

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, 2022	Year Ended June 30, 2021
Operating Lease Expense	\$ 348	\$ 310

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

	Classification on the Consolidated Balance Sheet	June 30, 2022
Assets		
Operating lease assets	Other non-current assets	\$ 1,126
Liabilities		
Other current liabilities	Current liabilities	313
Operating lease liabilities	Other non-current liabilities	811

Weighted Average Remaining Lease Term:

Operating leases	3.42 Years
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Weighted Average Discount Rate:

Operating leases	10.03%
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The following table outlines the minimum future lease payments for the next five years and thereafter, (in thousands):

For the year ending June 30,	
2023	412
2024	366
2025	357
2026	199
Thereafter	—
Total lease payments (Undiscounted cash flows)	<u>1,333</u>
Less imputed interest	(208)
Total	<u>\$ 1,125</u>

Note 15. Commitments and Contingencies

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. Benefits totaling approximately \$0.3 million provided to the Company through June 2022 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.

Litigation, Claims and Assessments

On October 4, 2021, the Company was named as a defendant in a complaint filed by Qorvo, Inc. in the United States District Court for the District of Delaware alleging, among other things, patent infringement, false advertising, false patent marking, and unfair competition. The plaintiff seeks an injunction enjoining us from the alleged infringement and damages, including punitive and statutory enhanced damages, in an unspecified amount. The Company filed a motion to dismiss all of the claims other than the direct patent infringement claims, but the court permitted the plaintiff to file an amended complaint which the court subsequently determined was sufficient for pleading purposes. The Court dismissed the Company’s motion in May 2022. We believe this lawsuit is without merit and intend to defend against it vigorously. However, we can provide no assurance as to the outcome of such dispute, and such action may result in judgments against us for an injunction, significant damages or other relief, such as future royalty payments to Qorvo, Inc. or restrictions on certain of our activities. Resolution of such matter may be prolonged and costly, and the ultimate result or judgment is uncertain due to the inherent uncertainty in litigation and other proceedings. Even if ultimately settled or resolved in our favor, this and other possible future actions may result in significant expenses, diversion of management and technical personnel attention and disruptions and delays in our business and product development, and other collateral consequences, all of which could have a material adverse effect on our business, financial condition and results of operations. Any out-of-court settlement of this or other actions may also have an adverse effect on our business, financial condition and results of operations, including, but not limited to, substantial expenses, the payment of royalties, licensing or other fees payable to third parties, or restrictions on our ability to develop, manufacture and sell our products.

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.

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, 2022 and \$0.1 million as of June 30, 2021 and are recorded on the Consolidated Balance Sheet as a long-term liability.

Note 16. 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.

The components of income tax expense (benefit) for the years ended June 30, 2022 and June 30, 2021 are as follows (in thousands):

	June 30, 2022	June 30, 2021
Current:		
Federal	\$ 134	\$ —
State and Local	15	—
Total Current Tax Provision (Benefit)	149	—
Deferred:		
Federal	(2,000)	—
State and Local	18	—
Total Deferred Tax Provision (Benefit)	(1,982)	—
Total Tax Provision (Benefit)	\$ (1,833)	\$ —

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, 2022	For the Year Ended June 30, 2021
Income taxes at Federal statutory rate	(21.00)%	(21.00)%
State income taxes, net of Federal income tax benefit	(0.29)%	(0.15)%
Tax Credits	(1.49)%	(2.15)%
Stock-based compensation	0.28%	(1.30)%
Other	0.14%	(0.30)%
Change in Valuation Allowance	19.32%	24.92%
Effect of changes in income tax rate applied to net deferred taxes	0.04%	(0.02)%
Income Tax Provision	(3.00)%	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, 2022	June 30, 2021
Deferred Tax Assets		
Net Operating Loss Carryforwards	\$ 47,031	\$ 32,688
Stock-based compensation	3,680	2,804
Credits	2,725	1,817
Other	1,022	1,010
	<u>54,458</u>	<u>38,319</u>
Deferred Tax Liabilities		
Intangibles	(1,808)	—
Accumulated depreciation/basis differences	(7,158)	(4,620)
	<u>(8,966)</u>	<u>(4,620)</u>
Valuation Allowance	(45,492)	(33,699)
Net Deferred Tax Assets	\$ —	\$ —

At June 30, 2022, 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 \$182.8 million that will carry forward indefinitely. The North Carolina, New York, California and Florida state loss carryovers of approximately \$28.7 million, \$11.5, \$12.7 and \$0.05 million, respectively, will begin to expire in 2029 if unused. Federal research credits of \$2.7 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, 2022 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, 2022 and 2021, 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, 2022 was an increase of approximately \$11.8 million.

The Company's gross unrecognized tax benefits totaled \$0.4 million as of June 30, 2022 and \$0.3 million as of June 30, 2021. Of these amounts, \$0.4 million and \$0.3 million as of June 30, 2022 and June 30, 2021, 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, 2021 through June 30, 2022 beginning and ending amount of gross unrecognized tax benefits is as follows (in thousands):

	June 30, 2022	June 30, 2021
Beginning Balance	\$ 326	\$ 200
Additions based on positions related to the current year	80	60
Additions for tax positions in prior years	21	66
Reductions for tax positions in prior years	—	—
Expiration of statute of limitations	—	—
Ending Balance	<u>\$ 427</u>	<u>\$ 326</u>

The unrecognized tax benefit of \$427 thousand at the end of June 30, 2022 is recorded on the Consolidated Balance Sheet as a reduction to the carrying value of the gross deferred tax assets.

The Company's fiscal 2018 federal and state returns and all subsequent years remain open for examination, as well as all attributes brought forward into those years. The Company is not currently under examination by any taxing authorities.

Note 17. 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, 2022 and 2021 are as follows (in thousands):

	Foundry Fabrication Services	RF Filters	Total
Year ended June 30, 2022			
Revenue	\$ 1,870	\$ 13,480	\$ 15,350
Cost of revenue	2,452	17,035	19,487
Gross margin	(582)	(3,555)	(4,137)
Research and development	—	35,708	35,708
General and administrative	—	20,710	20,710
Income/(Loss) from Operations	\$ (582)	\$ (59,973)	\$ (60,555)
Year ended June 30, 2021			
Revenue	\$ 2,848	\$ 3,770	\$ 6,618
Cost of Revenue	1,507	9,144	10,651
Gross Margin	1,341	(5,374)	(4,033)
Research and development	—	24,076	24,076
General and administrative	—	13,285	13,285
Loss from Operations	\$ 1,341	\$ (42,735)	\$ (41,394)
As of June 30, 2022			
Accounts receivable	\$ 572	\$ 3,221	\$ 3,793
Property and equipment, net	—	51,157	51,157
As of June 30, 2021			
Accounts receivable	\$ 242	\$ 928	\$ 1,170
Property and equipment, net	—	30,730	30,730

Note 18. 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, 2022 and 2021 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, 2022 and 2021:

	June 30, 2022	June 30, 2021
Convertible Notes	9,341,825	—
Options	3,020,002	2,497,577
Warrants	41,103	167,109
Total	<u>12,402,930</u>	<u>2,664,686</u>

Note 19. Fair Value Measurement

Fair value is defined as the price that would be received upon selling an asset or the price paid to transfer a liability on the measurement date. It focuses on the exit price in the principal or most advantageous market for the asset or liability in an orderly transaction between willing market participants. A three-tier fair value hierarchy is established as a basis for considering such assumptions and for inputs used in the valuation methodologies in measuring fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. The three levels of inputs used to measure fair values are as follows:

Level 1: Observable prices in active markets for identical assets and liabilities.

Level 2: Observable inputs other than quoted prices in active markets for identical assets and liabilities.

Level 3: Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets and liabilities.

The following table classifies the liabilities measured at fair value on a recurring basis into the fair value hierarchy as of June 30, 2022:

	Fair value at June 30, 2022	Level 1	Level 2	Level 3
Contingent consideration	\$ 1,446	\$ —	\$ —	\$ 1,446
Derivative liabilities	3,028	—	—	3,028
Total fair value	<u>\$ 4,474</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 4,474</u>

The following table sets forth a summary of the changes in the fair value of Level 3 contingent consideration that are measured at fair value on a recurring basis:

	June 30, 2022
Contingent consideration	
Beginning balance	\$ —
Initial fair value of contingent consideration	1,099
Change in fair value of contingent consideration	347
Ending balance	<u>\$ 1,446</u>

The fair value of contingent consideration liabilities that was classified as Level 3 in the table above was estimated using a Monte Carlo simulation in an option pricing framework with significant inputs that are not observable in the market and thus represents a Level 3 fair value measurement as defined in ASC 820. The significant inputs in the Level 3 measurement not supported by market activity include the probability assessments of expected future sales revenue of RFMi products in each of calendar year 2022 and 2023 and the volatility of those revenues, appropriately discounted considering the uncertainties associated with the obligation, and as calculated in accordance with the terms of the acquisition agreements. The development and determination of the unobservable inputs for Level 3 fair value measurements and the fair value calculations are the responsibility of the Company's chief financial officer and are approved by the chief executive officer.

The fair value of the contingent consideration liabilities on the issuance date and at the balance sheet date were valued with the following assumptions:

	June 30, 2022	October 15, 2021
Discount Rate	14.3% – 14.5%	9.9% – 10.2%
Revenue volatility	30%	30%
Risk free interest rate	1.71% – 3.04%	0.07% – 0.47%
Remaining term (years)	1.29 – 2.29	0.59 – 1.58

	June 30, 2022
Fair Value of Embedded Derivatives	
Beginning balance	\$ —
Initial fair value of make whole provision in convertible note	2,647
Initial fair value of change in control provision in convertible note	333
Change in fair value of convertible note derivatives	48
Ending balance	\$ 3,028

The fair value of the embedded derivatives in our convertible note that were classified as Level 3 in the table above were estimated using a with and without approach on a lattice model framework with significant inputs that are not observable in the market and thus represent a Level 3 fair value measurement as defined in ASC 820. The significant inputs in the Level 3 measurement not supported by market activity include the probability and timing assessments of expected future change of control events, the volatility of our share price and the discount rate used to present value future cash payments under the convertible debt obligation. The development and determination of the unobservable inputs for Level 3 fair value measurements and the fair value calculations are the responsibility of the Company's chief financial officer and are approved by the chief executive officer.

The fair value of the embedded derivatives in our convertible notes on the issuance date and at the balance sheet date were valued with the following assumptions:

	June 30, 2022	June 09, 2022
Stock Price	\$ 3.70	\$ 4.08
Volatility of stock price	70%	70%
Risk free interest rate	3.01%	3.07%
Debt yield	41.5%	40.0%
Remaining term (years)	5.0	5.0

Note 20. Subsequent Events

The Company performed a review of events subsequent to the balance sheet date through the date the financial statements were issued and determined that there were no such events requiring recognition or disclosure in the financial statements.

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, 2022, our management, with the participation of our Chief Executive Officer and 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 Chief Financial Officer have concluded based upon the evaluation described above that, as of June 30, 2022, 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. Under the supervision and with the participation of our management, including our Chief Executive Officer and our 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.

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, 2022.

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. Our system contains self-monitoring mechanisms, and actions are taken to correct deficiencies as they are identified.

As we are not 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, 2022.

Changes in Internal Control over Financial Reporting

During the quarter ended June 30, 2022, 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.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

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 2022 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 2022 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 2022 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 2022 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 2022 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

Consolidated Balance Sheets	F-3
Consolidated Statements of Operations	F-4
Consolidated Statement of Changes in Stockholders' Equity	F-5
Consolidated Statements of Cash Flows	F-6
Notes to Consolidated Financial Statements	F-7

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	<u>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).</u>
2.2	<u>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).</u>
2.3	<u>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).</u>
3.1	<u>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).</u>
3.2	<u>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).</u>
3.3	<u>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).</u>
3.4	<u>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).</u>
3.5	<u>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).</u>

Exhibit Number	Description
4.1*	<u>Description of Common Stock of the Registrant Registered Pursuant to Section 12 of the Securities Exchange Act of 1934 (incorporated by reference to Exhibit 4.8 to the Company's Annual Report on Form 10-K filed with the SEC on August 21, 2020).</u>
4.2	<u>Indenture, dated as of June 9, 2022 by and among the Company, 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 June 10, 2022).</u>
4.3	<u>Form of 6.0% Convertible Senior Note due 2027 (included in Exhibit 4.2).</u>
10.1.1†	<u>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).</u>
10.1.2†	<u>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).</u>
10.2.1†	<u>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).</u>
10.2.2†	<u>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).</u>
10.2.3†	<u>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).</u>
10.3†	<u>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).</u>
10.4†	<u>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).</u>
10.5.1†	<u>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).</u>
10.6.2†	<u>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).</u>
10.7.3†	<u>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).</u>

Exhibit Number	Description
10.8.1*	<u>Akoustis Technologies, Inc. Director Compensation Program, effective September 7, 2020</u>
10.8.2*	<u>Akoustis Technologies Inc. Director Compensation Program, effective August 26, 2022</u>
10.9	<u>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)</u>
10.10	<u>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)</u>
10.11.1	<u>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)</u>
10.1.2†	<u>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)</u>
10.11.3†	<u>Form of Restricted Stock Unit Award Agreement under the Akoustis Technologies, Inc. 2018 Stock Incentive Plan (incorporated by reference to Exhibit 4.10 to the Company's Registration Statement on Form S-8 filed with the SEC on November 16, 2018)</u>
10.11.4†	<u>Form of Performance-Based Restricted Stock Unit Award Agreement under the Akoustis Technologies, Inc. 2018 Stock Incentive Plan (incorporated by reference to Exhibit 4.11 to the Company's Registration Statement on Form S-8 filed with the SEC on November 16, 2018)</u>
10.11.4†	<u>Form of Nonqualified Option Award Agreement under the Akoustis Technologies, Inc. 2018 Stock Incentive Plan (incorporated by reference to Exhibit 4.12 to the Company's Registration Statement on Form S-8 filed with the SEC on November 16, 2018)</u>
10.12†	<u>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)</u>
10.130	<u>Registration Rights Agreement, dated as of June 9, 2022, by and among the Company, Akoustis Inc. and the purchasers named therein (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 10, 2022)</u>
10.14*	<u>Separation Agreement & Release, dated as of July 5, 2022, by and between the Company and Rohan Houlden</u>
10.15*	<u>Independent Contractor Agreement, dated as of July 5, 2022, by and between the Company and Rohan Houlden</u>
10.16*	<u>Lease Agreement, dated November 2019, by and between CB Office 10, Ltd. and RFM Integrated Device Inc.</u>
21.1*	<u>Subsidiaries of the Company</u>
23.1*	<u>Consent of Marcum LLP</u>
31.1*	<u>Rule 13(a)-14(a)/15(d)-14(a) Certification of Principal Executive Officer</u>
31.2*	<u>Rule 13(a)-14(a)/15(d)-14(a) Certification of Principal Financial and Accounting Officer</u>
32.1*	<u>Section 1350 Certification of Principal Executive Officer</u>
32.2*	<u>Section 1350 Certification of Principal Financial and Accounting Officer</u>
101§*	Interactive Data Files of Financial Statements and Notes.

Exhibit Number	Description
101.INS*	Inline XBRL Instance Document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document.
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104*	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* 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: September 12, 2022

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.

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ Jeffrey B. Shealy</u> Jeffrey B. Shealy	Chief Executive Officer (Principal Executive Officer), Director	September 12, 2022
<u>/s/ Kenneth E. Boller</u> Kenneth E. Boller	Chief Financial Officer (Principal Financial and Accounting Officer)	September 12, 2022
<u>/s/ Arthur E. Geiss</u> Arthur E. Geiss	Co-Chairman of the Board	September 12, 2022
<u>/s/ Jerry D. Neal</u> Jerry D. Neal	Co-Chairman of the Board	September 12, 2022
<u>/s/ Steven P. DenBaars</u> Steven P. DenBaars	Director	September 12, 2022
<u>/s/ Jeffrey K. McMahon</u> Jeffrey K. McMahon	Director	September 12, 2022
<u>/s/ Suzanne B. Rudy</u> Suzanne B. Rudy	Director	September 12, 2022
<u>/s/ J. Michael McGuire</u> J. Michael McGuire	Director	September 12, 2022

AKOUSTIS TECHNOLOGIES, INC. DIRECTOR COMPENSATION PROGRAM
As amended by joint approval of the Board and Compensation Committee
On
September 7, 2020

The following Director Compensation Program (the “Program”) is a summary of compensation paid to the non-employee directors of Akoustis Technologies, Inc. (the “Company”) for their services on the Company’s Board of Directors (the “Board”) and committees thereof.

Compensation of Non-Employee Directors

Under the Program, directors who are not employees of the Company or any subsidiary of the Company (“non-employee directors”) will only receive equity compensation, although the Board reserves the right to pay cash compensation in its discretion. Pursuant to the Program, our non-employee directors receive annual grants of nonqualified stock option awards (the “NQSO Awards”) and/or restricted stock unit awards (the “RSU Awards,” and together with the NQSO Awards, the “Annual Equity Awards”). Each director elects the proportion of NQSO Awards and/or RSU Awards he or she will receive (with any such election being made in 25% increments and the default election being 100% RSU Awards).

The total value of each director’s Annual Equity Award is achieved as follows:

Description of Service	Amount (\$)
Service on the Board	\$ 140,000
Service as Chair of the Board	\$ 50,000
Service on the Audit Committee	\$ 10,000
	-or-
Service as Chair of the Audit Committee	\$ 20,000
Service on the Compensation Committee	\$ 6,500
	-or-
Service as the Chair of the Compensation Committee	\$ 11,000
Service on the Nominating Committee	\$ 5,000
	-or-
Service as the Chair of the Nominating Committee.	\$ 10,000
Service on the Technology Committee	\$ 6,500
	-or-
Service as the Chair of the Technology Committee	\$ 11,000
Service on the Strategic Development Committee	\$ 35,000
	-or-
Service as the Chair of the Strategic Development Committee	\$ 35,000
Service on the IT Governance Committee	\$ 6,500
	-or-
Service as the Chair of the IT Governance Committee	\$ 11,000
- Directors are compensated for service as either a member or Chair of a Board committee.	

The base number of shares of the Company’s common stock (the “Common Stock”) subject to each Annual Equity Award equals (i) the award value (as calculated above), divided by (ii) the 30-day average of the closing price of the Common Stock as reported on The Nasdaq Stock Market LLC, measured as of the date that is one week prior to the date of the annual meeting of stockholders. Further, to the extent that a director properly elects to receive all or any portion of his or her Annual Equity Award in the form of NQSO Awards, the number of shares of Common Stock underlying the NQSO Award will be multiplied by two (2).

Annual Equity Awards are granted on the date of the Company's annual stockholders meeting (the "Annual Meeting"). The option price of any NQSO Awards will equal the fair market value per share (as determined under the 2018 Stock Incentive Plan (the "2018 Plan")) of the Common Stock on the grant date. Awards will fully vest and become non-forfeitable on the first anniversary of the grant date, subject to the director's continued service from the grant date until the vesting date and such other terms as found in the 2018 Plan and the relevant award agreement. In the event of a director's termination of service (for any reason other than Cause (as defined in the 2018 Plan)) within 30 days of the vesting date, the Annual Equity Award, to the extent not then vested, will continue to vest as provided in the relevant award agreement. Any vested NQSO Awards following a director's termination of service must be exercised within 90 days of the termination date (or 12 months in the event of death or Disability (as defined in the 2018 Plan)).

Any director joining the Board or a committee thereof mid-year will be entitled to receive a pro-rated Annual Equity Award representing the remaining months of service in the year (rounded up to the nearest full month). Any director joining the IT Governance Committee or Strategic Development Committee upon its formation on or about the date of the Program set forth above will be entitled to receive a pro-rated Annual Equity Award in respect of his or her service on the IT Governance Committee or Strategic Development Committee based on the number of months (rounded up to the nearest full month) between such date and the date of the 2020 Annual Meeting. For purposes of calculating the base number of shares for such pro-rated Annual Equity Award, the 30-day average of the closing price of the Common Stock, as reported on The Nasdaq Stock Market LLC, shall be measured as of the date that is one week prior to the date of approval of this updated Program. Such pro-rated IT Governance Committee and or Strategic Development Committee Annual Equity Award will be issued on the date of approval of this updated Program and be fully vested as of the date of the next Annual Meeting.

Compensation of Employee Directors

Directors who are also employees of the Company are not paid for their service as directors.

AKOUSTIS TECHNOLOGIES, INC. DIRECTOR COMPENSATION PROGRAM

As approved by the Board of Directors

On

August 26, 2022

The following Director Compensation Program (the “Program”) is a summary of compensation paid to the non-employee directors of Akoustis Technologies, Inc. (the “Company”) for their services on the Company’s Board of Directors (the “Board”) and committees thereof.

Compensation of Non-Employee Directors

Under the Program, directors who are not employees of the Company or any subsidiary of the Company (“non-employee directors”) will receive cash and/or equity compensation, as outlined in this Program. Pursuant to the Program, our non-employee directors receive cash compensation (“Annual Cash Award”), and annual grants of nonqualified stock option awards (the “NQSO Awards”) and/or restricted stock unit awards (the “RSU Awards,” and together with the NQSO Awards, the “Annual Equity Awards”).

The total compensation for each director is calculated as follows:

Description of Service	Amount (\$)
Service on the Board	\$ 140,000
Service as Chair of the Board	\$ 50,000
Service on the Audit Committee	\$ 10,000
	-or-
Service as Chair of the Audit Committee	\$ 30,000
Service on the Compensation Committee	\$ 6,500
	-or-
Service as the Chair of the Compensation Committee	\$ 11,000
Service on the Nominating Committee	\$ 5,000
	-or-
Service as the Chair of the Nominating Committee.	\$ 10,000
Service on the Technology Committee	\$ 6,500
	-or-
Service as the Chair of the Technology Committee	\$ 11,000
Service on the Strategic Development Committee	\$ 35,000
	-or-
Service as the Chair of the Strategic Development Committee	\$ 35,000
Service on the IT Governance Committee	\$ 6,500
	-or-
Service as the Chair of the IT Governance Committee	\$ 11,000
- Directors are compensated for service as either a member or Chair of a Board committee.	

Each director elects: (i) whether to receive 25% of his or her compensation in the form of an Annual Cash Award; and (ii) the proportion of the remaining compensation (the Annual Equity Award portion) he or she will receive as NQSO Awards and/or RSU Awards (with any such election being made in 25% increments and the default election being 100% of the Annual Equity Award to be in the form of RSU Awards). Annual Cash Awards shall be deemed earned ninety (90) days after the date of the Company’s annual stockholders meeting immediately preceding the applicable year of the director’s service (the “Annual Meeting”), and shall be paid within forty-five (45) days thereafter.

The base number of shares of the Company's common stock (the "Common Stock") subject to each Annual Equity Award equals (i) the award value (as calculated using the table above and excluding any Annual Cash Award elected by the director), divided by (ii) the 30-day average of the closing price of the Common Stock as reported on The Nasdaq Stock Market LLC, measured as of the date that is one week prior to the date of the Annual Meeting. Further, to the extent that a director properly elects to receive all or any portion of his or her Annual Equity Award in the form of NQSO Awards no later than the day prior to the Annual Meeting, the number of shares of Common Stock underlying the NQSO Award will be multiplied by two (2).

Annual Equity Awards are granted on the date of the Company's Annual Meeting. The option price of any NQSO Awards will equal the fair market value per share (as determined under the 2018 Stock Incentive Plan (the "2018 Plan")) of the Common Stock on the grant date. Awards will fully vest and become non-forfeitable on the first anniversary of the grant date, subject to the director's continued service from the grant date until the vesting date and such other terms as found in the 2018 Plan and the relevant award agreement. In the event of a director's termination of service (for any reason other than Cause (as defined in the 2018 Plan)) within 30 days of the vesting date, the Annual Equity Award, to the extent not then vested, will continue to vest as provided in the relevant award agreement. Any vested NQSO Awards following a director's termination of service must be exercised within 90 days of the termination date (or 12 months in the event of death or Disability (as defined in the 2018 Plan)).

Any director joining the Board or a committee thereof mid-year will be entitled to receive a pro-rated compensation consisting of an Annual Cash Award and/or Annual Equity Award representing the remaining months of service in the year (rounded up to the nearest full month). For purposes of calculating the base number of shares for such pro-rated Annual Equity Award, the 30-day average of the closing price of the Common Stock, as reported on The Nasdaq Stock Market LLC, shall be measured as of the date that is one week prior to the date of the date such director joins the Board or committee. Such pro-rated Annual Equity Award will be issued on the date such director joins the Board or committee and be fully vested as of the date of the next Annual Meeting.

Compensation of Employee Directors

Directors who are also employees of the Company are not paid for their service as directors.

SEPARATION AGREEMENT & RELEASE

July 5, 2022

Rohan W. Houlden
1780 Deer Run Court
Oak Ridge, NC 27310

Re: Separation Agreement & Release

Dear Mr. Houlden:

This letter confirms that on July 5, 2022, I personally delivered to you the enclosed Separation Agreement & Release. You have up to 21 days after receipt of this Separation Agreement & Release to consider whether to sign and date this Separation Agreement & Release, in which you waive important rights, including those under the Age Discrimination in Employment Act of 1967. We advise you to consult with an attorney of your choosing prior to signing this Separation Agreement & Release concerning the rights you are waiving as well as all other terms of this Separation Agreement & Release.

Very truly yours,

Akoustis, Inc.

SEPARATION AGREEMENT & RELEASE

Akoustis, Inc. (including its parent and subsidiary companies, "Akoustis") and Rohan W. Houlden ("Employee") agree that:

1. **Last Day of Employment.** Employee's last day of employment with Akoustis is July 5, 2022 ("Separation Date"). All compensation and benefits will cease as of the Separation Date, except as expressly provided in this Separation Agreement & Release or as otherwise required by law. The Separation Date will be deemed the effective date of Employee's separation of employment for all purposes. Employee shall have no authority to act on behalf of Akoustis or to bind it in any way after the Separation Date.

Employee's group health insurance will cease on the last day of the month in which Employee's employment ends. At that time, Employee will be eligible to continue group health insurance benefits at Employee's own expense, subject to the terms and conditions of the benefit plan, federal COBRA law, and, as applicable, state insurance laws. Employee will receive additional information regarding Employee's right to elect continued coverage under COBRA in a separate communication.

If Employee is enrolled in Akoustis' Employee Stock Purchase Plan ("ESPP"), (i) Employee shall be deemed to have withdrawn from the ESPP as of the Separation Date, (ii) the payroll deductions in Employee's notional account (that have not been used to purchase shares of Akoustis common stock) shall be returned to Employee, and (iii) Employee shall have no further rights under the ESPP.

2. **Consideration.** In consideration for Employee's signing this Separation Agreement & Release, and complying with its terms, Akoustis is entering into an Independent Contractor Agreement with Employee as of the Effective Date (as defined herein) of this Separation Agreement & Release (the "Independent Contractor Agreement") and providing the compensation and benefits thereunder to which Employee would not otherwise be entitled, including the Special Payment as defined in Exhibit A of the Independent Contractor Agreement.

Employee agrees that he will be exclusively responsible for the payment of any taxes owed on any amounts paid to Employee under the terms of this Separation Agreement & Release and the Independent Contract Agreement, except for any taxes on wages subject to an IRS Form W-2, including but not limited to the Special Payment, for which Akoustis is responsible. Akoustis makes no representation as to the taxability of the amount paid to Employee. Employee agrees to pay his portion of any additional federal, state, or local taxes, if any, which are required to be paid with respect to this Separation Agreement & Release and the Independent Contractor Agreement. Moreover, Employee agrees to indemnify Akoustis and hold Akoustis harmless from any interest, taxes or penalties assessed against it by any governmental agency as a result of the non-payment of taxes on any amounts paid to Employee or his attorneys under the terms of this Separation Agreement & Release and the Independent Contractor Agreement.

3. **No Consideration Absent Execution of this Separation Agreement & Release and Independent Contractor Agreement.** Employee understands and agrees that Employee would not receive the benefits specified in Section 2 above and in the Independent Contractor Agreement, except for Employee's execution of this Separation Agreement & Release and the fulfillment of the promises contained herein. If Employee has not returned this Separation Agreement & Release signed by Employee on or before the twenty-first (21st) day after Employee receives a copy of it, or if Employee revokes the Separation Agreement & Release during the seven (7) days after signing it, then all payments and benefits provided under Section 2 and under the Independent Contractor Agreement shall be forfeited and not paid.

4. **General Release of All Claims.** Employee, on Employee's own behalf and on behalf of Employee's heirs, personal representatives, successors and assigns, knowingly and voluntarily releases and forever discharges Akoustis, Inc., its parent corporation, affiliates, subsidiaries, divisions, predecessors, co-employers, insurers, successors and assigns, and their current and former employees, attorneys, officers, directors and agents thereof, both individually and in their business capacities, and their employee benefit plans and programs and the trustees, administrators, fiduciaries and insurers of such plans and programs (collectively referred to throughout the remainder of this Separation Agreement & Release as "Releasees"), of and from any and all claims, known and unknown, asserted or unasserted, which the Employee has or may have against Releasees as of the date of Employee's execution of this Separation Agreement & Release, including, but not limited to, any alleged violation of:

- Title VII of the Civil Rights Act of 1964;
- Sections 1981 through 1988 of Title 42 of the United States Code;
- The Employee Retirement Income Security Act of 1974;
- The Immigration Reform and Control Act;
- The Americans with Disabilities Act of 1990;
- The Age Discrimination in Employment Act of 1967 ("ADEA");
- The Family Medical Leave Act;
- The Equal Pay Act;
- The Workers Adjustment and Retraining Notification Act;
- The Fair Credit Reporting Act;
- All New York laws, including the New York State Human Rights Law, the New York Labor Law (including but not limited to the Retaliatory Action by Employers Law, the New York State Worker Adjustment and Retraining Notification Act, all provisions prohibiting discrimination and retaliation, and all provisions regulating wage and hour law), the New York Civil Rights Law, Section 125 of the New York Workers' Compensation Law, Article 23-A of the New York Correction Law, the New York City Human Rights Law, or the New York City Earned Sick Leave Law;

- All North Carolina laws, including the North Carolina Retaliatory Employment Discrimination Act, the North Carolina Persons with Disabilities Protection Act, the Equal Employment Practices Act, the Sickle Cell and Hemoglobin Trait Discrimination Act, the Genetic Testing and Information Discrimination Act, the Use of Lawful Products Discrimination Act, the AIDS and HIV Status Discrimination Act, the Jury Service Discrimination Act, or the Military Service Discrimination Act;
- any other federal, state or local law, rule, regulation, or ordinance;
- any public policy, contract, tort, or common law; or
- any basis for recovering costs, fees, or other expenses including attorneys' fees incurred in these matters.

Employee understands that the provisions of this paragraph mean that Employee cannot bring a lawsuit or arbitration in any forum against the Releasees for any reason for claims Employee may have as of the date of this Separation Agreement & Release. If any claim is not subject to release, to the extent permitted by law, Employee waives any right or ability to be a class or collective action representative or to otherwise participate in any putative or certified class, collective or multi-party action or proceeding based on such a claim in which Akoustis or any other Releasee identified in this Separation Agreement & Release is a party. Employee further agrees not to sue Akoustis or any of the Releasees with regard to any claim released above. However, this general release and waiver of claims excludes, and the Employee does not waive, release, or discharge: (A) any right to file an administrative charge or complaint with, or testify, assist, or participate in an investigation, hearing, or proceeding conducted by any federal or state administrative agencies; (B) claims that cannot be waived by law, such as claims for unemployment benefit rights and workers' compensation; (C) any rights to vested benefits, such as pension or retirement benefits, the rights to which are governed by the terms of the applicable plan documents and award agreements; and (D) claims under the New York Military Law; provided that Employee expressly releases, waives, and disclaims any right to compensation or other benefit that may otherwise inure to Employee as a result of any such charge or administrative complaint, with the exception of any award from the Securities and Exchange Commission ("SEC").

5. **Acknowledgments and Affirmations.** Employee affirms that Employee has not filed, caused to be filed, or presently is a party to any claim against the Releasees. Employee also affirms that Employee has been paid and/or has received all compensation, wages, bonuses, commissions, and/or vested benefits that were due Employee as of the Separation Date. Employee acknowledges that any other compensation, wages, bonuses, commissions, and/or vested benefits due at a later date shall be provided in accordance with Akoustis' standard procedures and applicable benefit plan documents.

Employee also affirms that Employee has not divulged any proprietary or confidential information of Akoustis and will continue to maintain the confidentiality of such information consistent with Akoustis' policies, the Employee Confidentiality, Proprietary Information and Patent and Invention Assignment Agreement executed by Employee with Akoustis on September 19, 2016 ("Confidentiality and IP Agreement"), and/or common law.

6. **Confidentiality and Return of Property; Non-Disparagement.** Employee agrees not to disclose any information regarding this Separation Agreement & Release, except to Employee's spouse, tax advisor, and/or an attorney with whom Employee chooses to consult regarding Employee's consideration of this Separation Agreement & Release. Employee agrees not to disparage Akoustis, or its officers, directors, employees, or agents, in any manner likely to be harmful to them or their business, business reputation or personal reputation. Employee affirms that Employee has returned all of Akoustis' property, documents, and/or any confidential information in Employee's possession or control. Employee also affirms that Employee is in possession of all of Employee's property that Employee had at Akoustis' premises and that Akoustis is not in possession of any of Employee's property.

7. **Protected Rights.** Employee understands that nothing in this Separation Agreement & Release limits Employee's ability to file a charge or complaint with the Equal Employment Opportunity Commission, the National Labor Relations Board, the Occupational Safety and Health Administration, the SEC or any other federal, state or local governmental agency or commission ("Government Agencies"). Employee further understands that this Separation Agreement & Release does not limit Employee's ability to communicate with any Government Agencies or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, including providing documents or other information, without notice to Akoustis. This Separation Agreement & Release does not limit Employee's right to receive an award for information provided to the SEC. This Separation Agreement & Release also does not restrict or impede Employee from disclosing the underlying facts or circumstances giving rise to a claim of sexual assault, harassment, or discrimination to the Equal Employment Opportunity Commission, the New York State Division of Human Rights, any local commission on human rights, and/or an attorney hired by the Employee.

8. **Expense Reimbursement.** Employee agrees that, within ten (10) days of the Separation Date, Employee will submit a final documented expense reimbursement statement reflecting all business expenses Employee incurred through the Separation Date, if any, for which Employee seeks reimbursement. Akoustis will reimburse Employee for these expenses pursuant to its regular business practice.

9. **Cooperation.** Subject to Employee's other personal and professional obligations and on reasonable notice and at reasonable times, Employee will cooperate with Akoustis and its counsel in connection with any investigation, administrative or regulatory proceeding or litigation relating to any matter in which Employee was involved or of which Employee has knowledge as a result of Employee's employment with Akoustis and/or any Releasee or Releasees.

10. **Governing Law and Interpretation.** This Separation Agreement & Release shall be governed and construed in accordance with the laws of North Carolina without regard to its conflict of laws provision. In the event of a breach of any provision of this Separation Agreement & Release, each party (i) consents to the personal jurisdiction of any state or federal court located in Charlotte, North Carolina (and any corresponding appellate court) in any proceeding arising out of or relating to this Separation Agreement & Release and Employee's employment with Akoustis, (ii) waives any venue or inconvenient forum defense to any proceeding maintained in such courts, and (iii) except as otherwise provided in this Separation Agreement & Release, agrees not to bring any proceeding arising out of or relating to this Separation Agreement & Release or the Employee's employment by Akoustis in any other court. Process in any such proceeding may be served on either party anywhere in the world. Should any provision of this Separation Agreement & Release be declared illegal or unenforceable by any court of competent jurisdiction and cannot be modified to be enforceable, excluding the general release language, such provision shall immediately become null and void, leaving the remainder of this Separation Agreement & Release in full force and effect.

11. **Nonadmission of Wrongdoing.** The Parties agree that neither this Separation Agreement & Release nor the furnishing of the consideration for this Separation Agreement & Release shall be deemed or construed at any time for any purpose as an admission by Releasees of wrongdoing or evidence of any liability or unlawful conduct of any kind.

12. **Amendment.** This Separation Agreement & Release may not be modified, altered or changed except in writing and signed by both Parties wherein specific reference is made to this Separation Agreement & Release.

13. **Binding Effect.** This Separation Agreement & Release will be binding upon and inure to the benefit of Akoustis, its successors and assigns. This Separation Agreement & Release will be binding upon and inure to the benefit of Employee and Employee's heirs, executors and administrators. Employee may not assign any of Employee's rights or obligations under this Separation Agreement & Release without the written consent of Akoustis.

14. **Severability.** Each provision of this Separation Agreement & Release is severable from every other provision of this Separation Agreement & Release. Any determination by a court of competent jurisdiction that a provision of this Separation Agreement & Release is invalid or unenforceable will not affect the validity or enforceability of any other provision hereof. Any provision of this Separation Agreement & Release held invalid or unenforceable only in part or degree will remain in full force and effect to the extent not held invalid or unenforceable.

15. **Counterparts.** This Separation Agreement & Release may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same agreement. Facsimile or PDF reproductions of original signatures shall be deemed binding for the purpose of the execution of this Separation Agreement & Release.

16. **Entire Agreement.** This Separation Agreement & Release sets forth the entire agreement between the Parties hereto, and fully supersedes any prior agreements or understandings between the Parties, except the Confidentiality and IP Agreement, which is incorporated herein by reference; and provided further that the Independent Contractor Agreement is preserved. Employee acknowledges that Employee has not relied on any representations, promises, or agreements of any kind made to Employee in connection with Employee's decision to accept this Separation Agreement & Release, except for those set forth in this Separation Agreement & Release and the Independent Contractor Agreement being entered into as of the Effective Date.

17. Provisions Related to ADEA Release.

THE CLAIMS WAIVED, RELEASED AND DISCHARGED IN THIS SEPARATION AGREEMENT & RELEASE INCLUDE ANY AND ALL CLAIMS EMPLOYEE HAS OR MAY HAVE ARISING OUT OF OR RELATED TO EMPLOYEE'S EMPLOYMENT WITH AKOUSTIS AND THE TERMINATION OF THAT EMPLOYMENT, INCLUDING ANY AND ALL CLAIMS UNDER THE AGE DISCRIMINATION IN EMPLOYMENT ACT.

EMPLOYEE IS ADVISED THAT EMPLOYEE HAS UP TO TWENTY- ONE (21) CALENDAR DAYS TO CONSIDER THIS SEPARATION AGREEMENT & RELEASE. EMPLOYEE ALSO IS ADVISED TO CONSULT WITH AN ATTORNEY PRIOR TO EMPLOYEE'S SIGNING OF THIS SEPARATION AGREEMENT & RELEASE.

EMPLOYEE MAY REVOKE THIS SEPARATION AGREEMENT & RELEASE FOR A PERIOD OF SEVEN (7) CALENDAR DAYS FOLLOWING THE DAY EMPLOYEE SIGNS THIS SEPARATION AGREEMENT & RELEASE. ANY REVOCATION WITHIN THIS PERIOD MUST BE SUBMITTED, IN WRITING, TO ANDREW WRIGHT AND STATE, "I HEREBY REVOKE MY ACCEPTANCE OF OUR SEPARATION AGREEMENT & RELEASE." THE REVOCATION MUST BE PERSONALLY DELIVERED TO ANDREW WRIGHT OR HIS DESIGNEE, OR MAILED TO ANDREW WRIGHT AND POSTMARKED WITHIN SEVEN (7) CALENDAR DAYS AFTER EMPLOYEE SIGNS THIS SEPARATION AGREEMENT & RELEASE. THIS DOCUMENT WILL NOT BECOME EFFECTIVE OR ENFORCEABLE UNTIL THE EIGHTH DAY AFTER THE EMPLOYEE SIGNS THIS SEPARATION AGREEMENT & RELEASE (THE "EFFECTIVE DATE"), ON WHICH DAY THIS AGREEMENT WILL AUTOMATICALLY BECOME EFFECTIVE AND ENFORCEABLE UNLESS PREVIOUSLY REVOKED WITHIN THAT SEVEN (7) DAY PERIOD.

EMPLOYEE FREELY AND KNOWINGLY, AND AFTER DUE CONSIDERATION, ENTERS INTO THIS SEPARATION AGREEMENT & RELEASE INTENDING TO WAIVE, SETTLE AND RELEASE ALL CLAIMS EMPLOYEE HAS OR MIGHT HAVE AGAINST RELEASEES. THOSE CLAIMS WAIVED, RELEASED AND DISCHARGED IN THIS SEPARATION AGREEMENT & RELEASE DO NOT INCLUDE, AND EMPLOYEE IS NOT WAIVING, RELEASING OR DISCHARGING, ANY CLAIMS THAT MAY ARISE AFTER THE DATE WHEN EMPLOYEE SIGNS THIS SEPARATION AGREEMENT & RELEASE.

The Parties knowingly and voluntarily sign this Separation Agreement & Release as of the date(s) set forth below:

EMPLOYEE

AKOUSTIS, INC.

By: /s/ Rohan W. Houlden
Rohan W. Houlden

By: /s/ Jeffrey B. Shealy
Jeffrey B. Shealy
Chief Executive Officer

Date: July 5, 2022

Date: July 5, 2022

INDEPENDENT CONTRACTOR AGREEMENT

This Independent Contractor Agreement (this "Agreement") is made and entered into as of the Effective Date of the Separation Agreement & Release (as defined below) (the "Effective Date") by and between Akoustis, Inc., a Delaware corporation ("Company"), and Rohan W. Houlden ("Contractor"). The Company and Contractor are referred to herein individually as a "Party" and collectively as the "Parties." This Agreement is being entered into in connection with that certain Separation Agreement & Release (the "Separation Agreement & Release") between the Parties, which provides for Contractor's execution and compliance with this Agreement. This Agreement is the "Independent Contractor Agreement" defined in Section 2 of the Separation Agreement & Release. The Parties hereby agree as follows:

1. Term and Termination

1.1 **Term**. The initial term of this Agreement shall begin on the Effective Date and shall continue for a period of two months, unless earlier terminated in accordance with this Agreement, and shall thereafter be automatically renewed on a month to month basis until terminated by either Party for any reason upon thirty days written notice to the other Party.

1.2 **Termination**. Either Party may terminate this Agreement for any reason during the initial term or any renewal term upon thirty days prior written notice to the other Party.

2. **Obligations Upon Termination**. Upon termination of this Agreement: (i) neither Contractor nor Company shall have any further obligations under this Agreement, except for the Company's obligation to provide the compensation and benefits described on Exhibit A attached hereto prior to the termination, as well as the Parties' obligations under Sections 5, 6, 7 and 9 of this Agreement, and (ii) Contractor shall immediately return all Company equipment, Proprietary Information, Inventions, and Work Product as defined in Section 5 of this Agreement.

3. Contracting Services and Relationship

3.1 **Services**. During the term of this Agreement, Contractor shall provide to Company the services set forth on Exhibit A and incorporated herein by reference (the "Services"). It is expected that Contractor shall be available to provide the Services to Company at such times as may be reasonably requested by Company. Contractor shall use his reasonable best efforts to perform the Services.

3.2 **Relationship**. It is expressly understood and agreed that, in the performance of the Services under this Agreement, Contractor is at all times acting as an independent contractor with respect to Company, and not as an employee, agent, partner or legal representative of Company. Further, it is expressly understood and agreed by the Parties that nothing contained in this Agreement shall be construed to create a joint venture, partnership, association, principal-agent relationship, or other affiliation or like relationship between the Parties, it being specifically agreed that the relationship is and shall remain that of independent parties to a contractual relationship as set forth in this Agreement. The Company shall not control the manner or means by which Contractor performs the Services, including but not limited to the time and place such Services are performed. Contractor will have exclusive control over the manner and means that Contractor performs the Services rendered. Contractor will set Contractor's own schedule, hours, and location for the performance of the Services rendered. Contractor will provide the tools, vehicles, equipment, supplies, materials or other items needed to perform the Services pursuant to this Agreement. Contractor shall not have any claim under this Agreement or otherwise against Company for vacation pay, paid sick leave, retirement benefits, social security, workers' compensation, health, disability, unemployment insurance benefits or other employee benefits of any kind (except as specifically set forth on Exhibit A hereto). It is understood and agreed that (i) Contractor will not be treated as Company's employee for federal tax purposes; (ii) Company will not withhold on behalf of Contractor any sums for income tax, withholding tax, unemployment insurance, social security, or any other benefits afforded to Company's employees; (iii) all of such payments, withholdings, and benefits, if any, are the sole responsibility of Contractor; and (iv) Contractor shall indemnify and hold Company harmless from any and all loss or liability arising from its failure to make such payments, withholdings, benefits and filings, if any. Contractor agrees and acknowledges that this Agreement does not grant, and Contractor shall not have, any authority, express or implied, to enter into any contract or assume any obligation on behalf of Company without the prior written consent of Company.

4. Compensation. In consideration for Contractor's full and timely performance of the Services, Company shall compensate Contractor pursuant to the terms set forth in Exhibit A. For the avoidance of doubt, such compensation includes any and all taxes and charges which are applicable to such compensation under applicable laws, and all such taxes and charges shall be Contractor's sole and exclusive responsibility. Contractor acknowledges that Contractor will receive an IRS Form 1099-MISC from the Company, and that Contractor shall be solely responsible for all federal, state, local, and foreign taxes for the Monthly Fees (as defined in Exhibit A). Contractor further acknowledges that Contractor will receive an IRS Form W-2 from the Company with respect to the Special Payment (as defined in Exhibit A) and that such Special Payment shall be subject to applicable tax withholding and deductions. Contractor acknowledges that Contractor shall be solely responsible for any amount owed with respect to any applicable federal, state, local and foreign taxes in excess of such withholding. Contractor understands and agrees that Contractor would not receive the compensation and benefits under this Agreement, except for Contractor's execution and non-revocation of the Separation Agreement & Release and the fulfillment of the promises contained therein and within this Agreement. If Contractor has not returned the Separation Agreement & Release signed by Contractor on or before the twenty-first day after Contractor receives a copy of it, or if Contractor revokes the Separation Agreement & Release during the seven days after signing it, then (i) all payments and benefits provided under this Agreement (including vesting of equity awards) shall be forfeited and not paid, and (ii) this Agreement shall be terminated immediately without further action.

5. Confidentiality.

5.1 **Proprietary Information.** Contractor agrees that all information, whether or not in writing, of a private, secret or confidential nature concerning Company's business, business relationships or financial affairs (collectively, "Proprietary Information") is and shall be the exclusive property of Company. By way of illustration, but not limitation, Proprietary Information may include inventions, products, processes, methods, techniques, formulas, technology, single-crystal piezoelectric materials technology, acoustic resonators technology, acoustic wave filters technology, designs, drawings, engineering, hardware configuration information, compositions, compounds, projects, developments, plans, research data, clinical data, financial data, personnel data, computer programs, software, customer and supplier lists, and contacts at or knowledge of customers or prospective customers of Company, including any derivatives of the foregoing items, provided, however, Proprietary Information does not include any of the foregoing items to the extent the same have become publicly known and made generally available through no wrongful act of Contractor or of others. Contractor agrees at all times, in the performance of Services under this Agreement, and for so long thereafter as any Proprietary Information may remain confidential, secret or otherwise wholly or partly protectable, to hold in strictest confidence, and not to use, except as instructed by the Company or as required by law, or to disclose to any person, firm or corporation without the written authorization of the President and Chief Executive Officer or the Board of Directors of Company, any Proprietary Information. Contractor understands that Contractor's unauthorized use or disclosure of Proprietary Information during Contractor's performance of Services under this Agreement will lead to action up to and including termination of this Agreement and legal action by Company. Contractor also understands that Contractor's unauthorized use or disclosure of Proprietary Information after the termination of this Agreement may lead to legal action by Company.

5.2 **Disclosure of Inventions.** Contractor will promptly disclose to Company (or any persons designated by it) all discoveries, developments, designs, improvements, inventions, blueprints, formulae, processes, techniques, computer programs, strategies, know-how and data, whether or not patentable or registerable under patent, trademark, copyright or similar statutes, made or conceived or reduced to practice or learned by Contractor, either alone or jointly with others, during Contractor's performance of Services under this Agreement that are related to the business of Company or that result from tasks assigned to Contractor by Company or that result from the use of premises or property (including computer systems and engineering facilities) owned, leased or contracted for by Company (all such discoveries, developments, designs, improvements, inventions, formulae, processes, techniques, computer programs, strategies, blueprints, know-how and data are hereinafter referred to as "Inventions"). Contractor will also promptly disclose to Company, and Company hereby agrees to receive all such disclosures in confidence, all other discoveries, developments, designs, improvements, inventions, formulae, processes, techniques, computer programs, strategies, blueprints, know-how and data, whether or not patentable or registerable under patent, trademark, copyright or similar statutes, made or conceived or reduced to practice or learned by Contractor, either alone or jointly with others, during Contractor's performance of Services under this Agreement for the purpose of determining whether they constitute "Inventions", as defined above.

5.3 **Ownership of Inventions.** All Inventions shall be the sole property of Company and its assigns, and Company and its assigns shall be the sole owner of all patents, copyrights, trademarks and other rights in connection therewith. Contractor hereby assigns to Company any rights Contractor may have or acquire in such Inventions. Contractor shall assist Company in every proper way as to all such Inventions (but at Company's expense) to obtain and, from time to time, enforce patents, copyrights, trademarks and other rights and protections relating to said Inventions in any and all countries, and to that end, Contractor will execute all documents for use in applying for and obtaining such patents, copyrights, trademarks and other rights and protections on and enforcing such Inventions, as Company may desire, together with any assignments thereof to Company or persons designated by it.

5.4 **Work Product.** Anything Contractor produces, solely or jointly with others, during Contractor's performance of Services under this Agreement ("Work Product") shall constitute a "work made for hire" pursuant to 17 U.S.C § 101, and shall be the sole and exclusive property of Company. By way of illustration, but not limitation, Work Product may include all documents, photographs, artwork, literature, engineering drawings, data compilations, reports and other media or materials produced by or as the result of Contractor's work or delivered by Contractor in the course of performing that work. To the extent Contractor's Work Product is determined not to be a work for hire, Contractor hereby assigns to Company all right, title, and interest in and to such work, including the copyright and all other intellectual property rights associated therewith, including all possible copyright, patent, and trademark registrations or renewals. To the extent that the vesting of rights to any Work Product in Company requires Contractor's written assignment or other written documents to be signed by Contractor, Contractor agrees, at no additional cost to Contractor, but at Company's expense, to execute any such assignments and any such other written documents as may be required to cause the vesting of such rights in Company. In the event the Company is unable, after reasonable effort, to secure Contractor's signature on any document or documents needed to apply for or prosecute any patent, copyright or other right or protection relating to Work Product, for any reason whatsoever, Contractor hereby irrevocably designates and appoints the Company and its duly authorized officers and agents as Contractor's agent and attorney-in-fact, to act for and on Contractor's behalf to execute and file any such application or applications and to do all other lawfully permitted acts to further the prosecution and issuance of patents, trademarks, copyrights or similar protections thereon with the same legal force and effect as if executed by Contractor and Contractor hereby ratifies, affirms and approves all such lawfully permitted acts accordingly. To the extent, and for whatever reason, Contractor is deemed to own less than the exclusive right, title and interest to Work Product, Contractor hereby grants Company all the rights it possesses in the Work Product including, but not limited to, an exclusive, worldwide, perpetual, and royalty-free license to use, market and sublicense such work as Company deems appropriate in its sole discretion.

5.5 **Equitable Remedies.** Contractor acknowledges that the restrictions contained in Sections 5 and 7 of this Agreement are reasonable and necessary to protect the legitimate interests of Company, and that any violation of any provisions of Sections 5 and 7 will result in irreparable injury to Company for which there is no adequate remedy at law and that Company shall have the right to enjoin Contractor from acts in violation of Sections 5 and 7, including by temporary restraining order, preliminary and permanent injunction. The right of equitable remedies shall be in addition to and not in lieu of all of the rights and remedies Company shall have at law or in equity, including, without limitation, the right to recover damages.

5.6 **Legally Protected Conduct.** Notwithstanding any other provision of this Agreement, Contractor will not be held criminally or civilly liable under any federal or state trade secret law for any disclosure of a trade secret that is made: (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or is made in a complaint or other document that is filed under seal in a lawsuit or other proceeding. If Contractor files a lawsuit for retaliation by the Company for reporting a suspected violation of law, Contractor may disclose the Company's trade secrets to Contractor's attorney and use the trade secret information in the court proceeding if Contractor (i) files any document containing the trade secret under seal, and (ii) does not disclose the trade secret, except pursuant to court order. Further, nothing contained in this Agreement limits Contractor's ability to file a charge or complaint with a federal, state or local governmental agency or commission ("Government Agencies"). Also this Agreement does not limit Contractor's ability to communicate with any Government Agencies or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, including providing documents or other information, without notice to the Company.

6. **Documentation.** In the event of the termination of this Agreement, Contractor will promptly deliver to Company all documents, notes, drawings, blueprints, formulae, specifications, computer programs, data and all other materials of any nature pertaining to any Proprietary Information or to Contractor's work with Company, and will not take any of the foregoing or any reproduction of any of the foregoing that is embodied in a tangible medium of expression.

7. **Restrictive Covenants.**

7.1 **Non-Competition.** During the term of this Agreement and for twelve months thereafter (the "Restriction Period"), Contractor shall not provide Competitive Services (defined below) to any business, firm, corporation, partnership, association, joint venture or other entity that engages or conducts any business the same as or substantially similar to the Company's acoustic resonator and RF filter business (the "Business"), anywhere in the Restricted Territory (defined below); provided, however, that Contractor may own less than 5% in the aggregate of the outstanding shares of any class of securities of any enterprise (but without otherwise participating in the activities of such enterprise), other than any such enterprise with which the Company competes or is currently engaged in a joint venture, if such securities are of a class listed on any national or regional securities exchange or have been registered under Section 12(b) or (g) of the Exchange Act.

7.2 **Non-Solicitation.** During the Restriction Period, Contractor shall not: (i) solicit or hire, or attempt to recruit, persuade, solicit or hire, any employee, or independent contractor of, or consultant to, the Company, or its affiliates, to leave the employment (or independent contractor relationship) thereof, whether or not any such employee or independent contractor is party to an employment agreement; or (ii) attempt in any manner to solicit or accept from any customer or client of the Company or any of its affiliates, with whom Contractor had material business-related contact (during the six months prior to the termination of the Agreement, regardless of whether during the term of this Agreement or during Contractor's prior employment relationship with the Company) or about whom Contractor learned Proprietary Information (during the six months prior to the termination of the Agreement, regardless of whether during the term of this Agreement or during Contractor's prior employment relationship with the Company), business of the kind or competitive with the business done by the Company or its affiliates with such customer or to persuade or attempt to persuade any such customer to cease to do business or to reduce the amount of business which such customer has customarily done or is reasonably expected to do with the Company or any of its affiliates or if any such customer elects to move its business to a person other than the Company or any of its affiliates, provide Competitive Services to such customer, or have any discussions regarding any such service with such customer, on behalf of such other person. An employee or independent contractor shall be deemed covered by this Section 7.2 while employed or retained by the Company and for a period of six months thereafter.

7.3 Contractor agrees that the Restriction Period will be extended by the duration of any violation by Contractor of any of Contractor's obligations under this Section 7. For purposes of this Agreement, "Competitive Services" means any position in which Contractor will provide the same or substantially similar services as those performed by Contractor during the six months prior to the termination of this Agreement, regardless of whether during the term of this Agreement or during Contractor's prior employment relationship with the Company. "Restricted Territory," is defined as: (i) North America, (ii) the United States, (iii) the State of North Carolina, (iv) the State of New York, (v) any state in which the Company operates during the term of this Agreement, (vi) any state in which Contractor performed Services for the Company during the term of this Agreement, and (vii) within fifty miles of Contractor's primary worksite during the six month period prior to the termination of this Agreement.

7.4 Contractor expressly agrees that the character, duration and scope of Sections 7.1, 7.2, and 7.3 are reasonable in light of the circumstances as they exist at the date upon which this Agreement has been executed and do not impose a greater restraint than necessary to protect the goodwill and other legitimate business interests of the Company and its affiliates, including their goodwill, Proprietary Information, and employee and independent contractor relationships, and that Contractor had the opportunity to review the provisions of this Agreement with legal counsel of Contractor's choosing. In particular, Contractor agrees and acknowledges that the Company is currently engaging in Business and actively marketing its services and products throughout the Restricted Territory, and that the Company expends significant time and effort developing and protecting the confidentiality of its Proprietary Information. Contractor acknowledges and agrees that the consideration provided to Contractor under this Agreement is sufficient consideration for Contractor's responsibilities and commitments hereunder. During Contractor's service under this Agreement and during Contractor's prior employment with the Company, Contractor has been and will be exposed to highly sensitive Proprietary Information, including regarding the Company's business plans, business processes, methods of operation, customers, vendors, and other business relationships. Contractor agrees that enforcement by the Company of this Agreement will not cause economic hardship to Contractor.

8. **Compliance with Laws**. In their performance of this Agreement, the Parties shall comply with the provisions of all applicable federal, state, county, and local laws, ordinances, regulations and codes (including procurement of required permits, licenses or certificates).

9. **General Provisions**.

9.1 **Governing Law and Interpretation**. This Agreement shall be governed and construed in accordance with the laws of North Carolina without regard to its conflict of laws provision. In the event of a breach of any provision of this Agreement, each Party (i) consents to the personal jurisdiction of any state or federal court located in Charlotte, North Carolina (and any corresponding appellate court) in any proceeding arising out of or relating to this Agreement, (ii) waives any venue or inconvenient forum defense to any proceeding maintained in such courts, and (iii) except as otherwise provided in this Agreement agrees not to bring any proceeding arising out of or relating to this Agreement in any other court. Process in any such proceeding may be served on either Party anywhere in the world. Should any provision of this Agreement be declared illegal or unenforceable by any court of competent jurisdiction and cannot be modified to be enforceable, excluding the general release language, such provision shall immediately become null and void, leaving the remainder of this Agreement in full force and effect. All payments and benefits under this Agreement are intended to comply with or be exempt from Section 409A of the Internal Revenue Code of 1986, as amended, and this Agreement shall be interpreted and operated consistent with this intent.

9.2 **Amendment**. This Agreement may not be modified, altered or changed except in writing and signed by both Parties wherein specific reference is made to this Agreement.

9.3 **Binding Effect.** This Agreement will be binding upon and inure to the benefit of the Company, its successors and assigns. This Agreement will be binding upon and inure to the benefit of Contractor and Contractor's heirs, executors and administrators. Contractor may not assign any of Contractor's rights or obligations under this Agreement without the written consent of the Company.

9.4 **Severability; Modification.** Each provision of this Agreement is severable from every other provision of this Agreement. Any determination by a court of competent jurisdiction that a provision of this Agreement is invalid or unenforceable will not affect the validity or enforceability of any other provision hereof. Any provision of this Agreement held invalid or unenforceable only in part or degree will remain in full force and effect to the extent not held invalid or unenforceable. Should a determination be made by a court of competent jurisdiction at a later date that the character, duration or geographical scope of the covenant not to compete is unreasonable in light of the circumstances as they then exist, then it is the intention of the Contractor, on the one hand, and the Company, on the other, that the covenant not to compete shall be construed by the court in such a manner as to impose only those restrictions on the conduct of Contractor which are reasonable in light of the circumstances as they then exist and necessary to assure the Company of the intended benefit of the covenant not to compete, and the Parties agree that the Agreement shall be construed by severing, limiting, reducing, or modifying it to the least extent necessary, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

9.5 **Counterparts.** This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same agreement. Facsimile or PDF reproductions of original signatures shall be deemed binding for the purpose of the execution of this Agreement.

9.6 **Other Agreements.** Contractor represents and warrants that Contractor's execution and delivery of this Agreement and the performance of all the terms of this Agreement does not and will not breach any agreement to keep in confidence proprietary information acquired by Contractor in confidence or trust. Contractor and Company have previously entered into the Separation Agreement & Release and an Employee Confidentiality, Proprietary Information and Patent and Invention Assignment Agreement executed by Contractor with the Company on September 19, 2016 ("Confidentiality and IP Agreement"). The Contractor's obligations under this Agreement are in addition to and do not supersede the Confidentiality and IP Agreement and the Separation Agreement & Release. Contractor represents and warrants that he has fully complied with all obligations arising under such Confidentiality and IP Agreement prior to the Effective Date.

9.7 **Notices.** Any notice which a Party is required or may desire to give pursuant to this Agreement shall be given by email, personal delivery or registered or certified mail, return receipt requested, addressed to Contractor at Contractor's email address, address of record with Company and addressed to Company at its principal office, or at such other place as either Party may, from time to time, designate in writing. The date of email transmission, personal delivery or the date of mailing any such notice shall be deemed to be the date of delivery thereof.

9.8 **Headings.** The headings of the sections hereof are inserted for convenience only and shall not be deemed to constitute a part hereof nor to affect the meaning hereof.

9.9 **Waivers.** Any failure by Company to enforce any provision of this Agreement shall not constitute a waiver of the provisions, nor shall a waiver once granted be construed to waive a subsequent breach of the same or other provision.

Contractor hereby acknowledges that Contractor has been advised to seek an attorney who will advise Contractor regarding the legal implications of this Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

COMPANY
Akoustis, Inc.

CONTRACTOR
Rohan W. Houlden

Print Name: _____

Date: _____

Title: _____

Date: _____

Exhibit A
Services and Compensation

1. Duties and Responsibilities of Contractor. Contractor shall be reasonably available to perform such services as are reasonably requested by the Chief Executive Officer of the Company, including without limitation (a) special projects assigned by the Chief Executive Officer, (b) supporting the transition of the Contractor's former responsibilities to the Company's new Chief Product Officer, (c) being available to provide support to the Company in certain litigation matters to which it is or may be a party, and (d) supporting the further development of intellectual property with respect to which Contractor has previously been involved.

2. Compensation. In consideration for Contractor's full and timely performance of the Services described in Section 1 above, the Contractor shall be entitled to the following compensation and benefits.

2.1. Monthly Fee. Contractor shall be paid a ("Monthly Fee") calculated as follows: (a) during the first three months of the term of this Agreement (until the three-month anniversary of the Effective Date), the Monthly Fee shall be \$8,333.33 per month, or (b) after the three-month anniversary of the Effective Date, the Monthly Fee shall be calculated at a rate of \$175 per hour of Services rendered, subject to a maximum Monthly Fee of \$8,333.33 per month. The Monthly Fee shall be payable on a monthly basis in accordance with customary accounts payable policies of the Company.

2.2. Special Payment. So long as Contractor remains engaged hereunder and continues rendering Services pursuant to, and complying with, this Agreement and the Separation Agreement & Release through the date when the Company's Compensation Committee makes a final determination regarding annual bonuses for the Company's fiscal year ending on June 30, 2022, Contractor shall be paid a lump sum payment (the "Special Payment") in an amount equal to the bonus that he would have earned under the Company's Annual Bonus Compensation Plan for fiscal year 2022 had he remained an employee of the Company. This Special Payment shall be at the same time as when the Company provides payment under its Annual Bonus Compensation Plan for fiscal year 2022 to its employees, but in all events shall be paid during the 2022 calendar year.

2.3. Equity Compensation. All outstanding Options, Restricted Stock Units, Restricted Stock Awards (each such term as defined in the Plans defined below) or other grants of equity based compensation under Akoustis' 2018 Stock Incentive Plan, 2016 Stock Incentive Plan, 2015 Equity Incentive Plan or 2014 Stock Plan (each a "Plan") shall remain outstanding and continue to vest in accordance with their terms for so long as Contractor is providing services under this Agreement. Upon the termination of the Agreement for any reason, all unvested Options, Restricted Stock Units, Restricted Stock Awards or other grants of equity based compensation under the Plans shall immediately terminate and be forfeited and Contractor shall have no further rights with respect thereto. Contractor acknowledges that any and all vested Options shall expire within the time period set forth in the Plan and related award agreement (generally ninety days from the termination of this Agreement).

LEASE AGREEMENT BETWEEN

**CB OFFICE 10, LTD.,
AS LANDLORD, AND**

**RFM Integrated Device Inc.
AS TENANT**

DATED NOVEMBER_, 2019

**PROJECT: INTERNATIONAL BUSINESS PARK, PHASE X
CARROLLTON, TEXAS**

Billingsley Office Lease Form- 2013v2
Building 10

BASIC LEASE INFORMATION

Lease Date: November __, 2019

Landlord: **CB OFFICE 10, LTD.**, a Texas limited partnership

Tenant: **RFM Integrated Device Inc.**, a Texas incorporated company

Premises: Suite No. 1155, containing 1,834 rentable square feet, in the office building whose street address is 4100 Midway Road, Carrollton, Texas 75007 (the "**Building**"). The Premises are outlined on the plan attached to the Lease as Exhibit A. The land on which the Building is located (the "**Land**") is described on Exhibit B. The term "**Project**" shall collectively refer to the Building, the Land and the driveways, parking facilities, and similar improvements and easements associated with the foregoing or the operation thereof.

Term: 39 full calendar months, plus any partial month from the Commencement Date to the end of the month in which the Commencement Date falls, starting on the Commencement Date and ending at 5:00 p.m. local time on the last day of the 39th full calendar month following the Commencement Date, subject to adjustment and earlier termination as provided in the Lease.

Commencement Date: January 1, 2020

Basic Rent: Subject to the conditional abatement of Basic Rent set forth below, Basic Rent shall be the following amounts for the following periods of time:

Lease Month	Annual Basic Rent Rate Per Rentable Square Foot	Monthly Basic Rent
January 1, 2020–March 31, 2021	\$ 19.50	\$ 2,980.25
April 1, 2021–March 31, 2022	\$ 20.00	\$ 3,056.67
April 1, 2022–March 31, 2023	\$ 20.50	\$ 3,133.08

As used herein, the term "**Lease Month**" means each calendar month during the Term (and if the Commencement Date does not occur on the first day of a calendar month, the period from the Commencement Date to the first day of the next calendar month shall be included in the first Lease Month for purposes of determining the duration of the Term and the monthly Basic Rent rate applicable for such partial month).

Basic Rent and Additional Rent shall be conditionally abated until March 31, 2020. Commencing April 1, 2020, Tenant shall make Basic Rent payments as otherwise provided herein. Notwithstanding such abatement of Basic Rent (a) all other sums due under this Lease, including Tenant's Proportionate Share of Electrical Costs, shall be payable as provided in this Lease, and (b) any increases in Basic Rent set forth in this Lease shall occur on the dates scheduled therefor.

Security Deposit: Rent: \$18,645.68

Rent: Basic Rent, Tenant's Proportionate Share of Electrical Costs, Tenant's share of Additional Rent, and all other sums that Tenant may owe to Landlord or otherwise be required to pay under the Lease.

Permitted Use: General office use, including lab use for testing of electronic equipment and/or components and software development.

Tenant's Proportionate Share: 1.7649%, which is the percentage obtained by dividing (a) the number of rentable square feet in the Premises as stated above by (b) the 103,916 rentable square feet in the Building. Landlord and Tenant stipulate that the number of rentable square feet in the Premises and in the Building set forth above is conclusive and shall be binding upon them.

Expense Stop: None; NNN Lease.

Initial Liability Insurance Amount: \$3,000,000

Tenant's Address: RFM Integrated Device Inc.
2160 Lundy AVE STE 220
_ SAN JOSE, CA 95131
Attention: Mavis, Chen
Telephone: 408-894-9882
Telecopy: 408-894-9869

Landlord's Address:	For all Notices:	With a copy to:
	Billingsley Property Services, Inc. 1722 Routh Street, Suite 770 Dallas, Texas 75201 Attention: Lease Administration, Office Telephone: 214-270-1000 Telecopy: 214-270-0992	Billingsley Property Services, Inc. 1722 Routh Street, Suite 770 Dallas, Texas 75201 Attention: Legal Department Telephone: 214-270-1000 Telecopy: 214-270-0992

The foregoing Basic Lease Information is incorporated into and made a part of the Lease identified above. If any conflict exists between any Basic Lease Information and the Lease, then the Lease shall control.

LEASE

This Lease Agreement (this "**Lease**") is entered into as of November_, 2019, between **CB OFFICE 10, LTD.**, a Texas limited partnership ("**Landlord**"), and **RFM Integrated Device Inc.**, a corporate company ("**Tenant**").

1. **Definitions and Basic Provisions.** The definitions and basic provisions set forth in the Basic Lease Information (the "**Basic Lease Information**") executed by Landlord and Tenant contemporaneously herewith are incorporated herein by reference for all purposes. Additionally, the following terms shall have the following meanings when used in this Lease: "**Affiliate**" means any person or entity which, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with the party in question; "**Building's Structure**" means the Building's exterior walls, roof elevator shafts, footings, foundations, structural portions of load-bearing walls, structural floors and subfloors, and structural columns and beams; "**Building's Systems**" means the Building's HVAC, life-safety, plumbing, electrical, and mechanical systems; "including" means including, without limitation; "**Laws**" means all federal, state, and local laws, ordinances, rules and regulations, all court orders, governmental directives, and governmental orders and all interpretations of the foregoing, and all restrictive covenants affecting this Lease or the Project, and "**Law**" means any of the foregoing; "**Tenant's Off Premises Equipment**" means any of Tenant's equipment or other property that may be located on or about the Project (other than inside the Premises); and "**Tenant Party**" means any of the following persons: Tenant; any assignees claiming by, through, or under Tenant; any subtenants claiming by, through, or under Tenant; and any of their respective agents, contractors, employees, licensees, guests and invitees. "**Leasing Costs**" means all costs incurred and inducements offered by Landlord in leasing the Premises to Tenant (including, without limitation, commissions, abated Rent, abated parking charges, tenant improvement allowances, costs incurred to prepare the Premises for Tenant).
2. **Lease Grant.** Subject to the terms of this Lease, Landlord leases to Tenant, and Tenant leases from Landlord, the Premises.
3. **Tender of Possession.** Landlord and Tenant presently anticipate that possession of the Premises will be tendered to Tenant in the condition required by this Lease on or about the Commencement Date (the "**Estimated Delivery Date**"). If Landlord is unable to tender possession of the Premises in such condition to Tenant by the Estimated Delivery Date, then (a) the validity of this Lease shall not be affected or impaired thereby, (b) Landlord shall not be in default hereunder or be liable for damages therefor except as specifically set forth below in this Section 3, and (c) Tenant shall accept possession of the Premises when Landlord tenders possession thereof to Tenant. The Estimated Delivery Date, as extended day-for-day for any days of Force Majeure delay to Landlord's Work, is referred to as the "**Adjusted Estimated Delivery Date**". If delivery of the Premises is delayed beyond the Adjusted Estimated Delivery Date, such delay shall not be a default by Landlord, render this Lease void or voidable, or otherwise render Landlord liable for damages (except as specifically provided in this paragraph). If delivery of the Premises has not occurred on or prior to the date that is 30 days after the Adjusted Estimated Delivery Date, Tenant's obligation to pay Basic Rent for the Premises shall be abated two days for each day after the 30th day after the Adjusted Estimated Delivery Date until delivery of the Premises occurs. If delivery of the Premises has not occurred on or prior to the date that is 90 days following the Adjusted Estimated Delivery Date, Tenant may terminate this Lease by delivering written notice to Landlord and Landlord's Mortgagee within ten business days following the expiration of such 90-day period and prior to the date upon which delivery of the Premises actually occurs. Such termination shall be effective as of the 30th day after delivery thereof, subject to the remainder of this paragraph. If Tenant fails to timely give such termination notice, Tenant shall be deemed to have waived its right to terminate this Lease under this Section 3, time being of the essence with respect thereto. Notwithstanding the foregoing, if upon the receipt from Tenant of a written election to terminate this Lease as provided in this paragraph, Landlord reasonably believes it can ensure that delivery of the Premises is achieved within 30 days following the receipt of such notice, Landlord may, in its sole discretion, elect to proceed with such work and, provided delivery of the Premises occurs within such 30-day period, Tenant's election to terminate shall be null and void. By occupying the Premises, Tenant shall be deemed to have accepted the Premises in their condition as of the date of such occupancy, subject to the performance of punch-list items that remain to be performed by Landlord, if any. Prior to occupying the Premises, Tenant shall execute and deliver to Landlord a letter substantially in the form of Exhibit E hereto confirming (1) the Commencement Date and the expiration date of the initial Term, (2) that Tenant has accepted the Premises, and (3) that Landlord has performed all of its obligations with respect to the Premises (except for punch-list items specified in such letter); however, the failure of the parties to execute such letter shall not defer the Commencement Date or otherwise invalidate this Lease. Occupancy of the Premises by Tenant prior to the Commencement Date shall be subject to all of the provisions of this Lease excepting only those requiring the payment of Basic Rent, Additional Rent, and Electrical Costs (each as defined herein).

Rent.

- (a) **Payment.** Tenant shall timely pay to Landlord Rent, without notice, demand, deduction or set off (except as otherwise expressly provided herein), by good and sufficient check drawn on a national banking association at Landlord's address provided for in this Lease or as otherwise specified by Landlord and shall be accompanied by all applicable state and local sales or use taxes. The obligations of Tenant to pay Basic Rent and other sums to Landlord and the obligations of Landlord under this Lease are independent obligations. Basic Rent, adjusted as herein provided, shall be payable monthly in advance. The first monthly installment of Basic Rent shall be payable contemporaneously with the execution of this Lease; thereafter, Basic Rent shall be payable on the first day of each month beginning on the first day of the second full calendar month of the Term. The monthly Basic Rent for any partial month at the beginning of the Term shall equal the product of 1/365 of the annual Basic Rent in effect during the partial month and the number of days in the partial month, and shall be due on the Commencement Date. Payments of Basic Rent for any fractional calendar month at the end of the Term shall be similarly prorated. Tenant shall pay Additional Rent at the same time and in the same manner as Basic Rent.
- (b) **Operating Costs; Taxes; Electrical Costs.**
- (1) Tenant shall pay to Landlord Tenant's Proportionate Share of the Operating Costs (defined below) ("**Additional Rent**") in the Building. Landlord may make a good faith estimate of the Additional Rent to be due by Tenant for any calendar year or part thereof during the Term. During each calendar year or partial calendar year of the Term, Tenant shall pay to Landlord, in advance concurrently with each monthly installment of Basic Rent, an amount equal to the estimated Additional Rent for such calendar year or part thereof divided by the number of months therein. From time to time, Landlord may in good faith estimate and re-estimate the Additional Rent to be due by Tenant and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Additional Rent payable by Tenant shall be appropriately adjusted in accordance with the estimations so that, by the end of the calendar year in question, Tenant shall have paid all of the Additional Rent as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when actual Operating Costs are available for each calendar year.
 - (2) The term "**Operating Costs**" means all expenses and disbursements (subject to the limitations set forth below) that Landlord incurs in connection with the ownership, operation, and maintenance of the Project, determined in accordance with sound accounting principles consistently applied, including the following costs: (A) wages and salaries of all on-site employees at or below the grade of building manager engaged in the operation, maintenance or security of the Project (together with Landlord's reasonable allocation of expenses of off-site employees at or below the grade of building manager who perform a portion of their services in connection with the operation, maintenance or security of the Project), including taxes, insurance and benefits relating thereto; (B) all supplies and materials used in the operation, maintenance, repair, replacement, and security of the Project; (C) costs for improvements made to the Project which, although capital in nature, reduce the normal operating costs (including all utility costs) of the Project, as amortized using a commercially reasonable interest rate over the time period reasonably estimated by Landlord to recover the costs thereof taking into consideration the anticipated cost savings (but in no event shall such amortized costs exceed cost savings actually realized), as determined by Landlord using its good faith, commercially reasonable judgment, as well as capital improvements made in order to comply with any Law hereafter promulgated by any governmental authority or any interpretation hereafter rendered with respect to any existing Law, as amortized using a commercially reasonable interest rate over the useful economic life of such improvements as determined by Landlord in its reasonable discretion; (D) cost of all utilities, except Electrical Costs and the cost of other utilities reimbursable to Landlord by the Project's tenants other than pursuant to a provision similar to this Section 4(b); (E) insurance expenses; (F) repairs, replacements, and general maintenance of the Project; (G) fair market rental and other costs with respect to the management office for the Building; (H) service, maintenance and management contracts with independent contractors for the operation, maintenance, management, repair, replacement, or security of the Project (including alarm service, window cleaning, and elevator maintenance); (I) a management fee not to exceed four percent (4%) of the Rent for the Building; and (J) Taxes. If the Building is part of a multi building office complex (the "**Complex**"), Operating Costs for the Complex may be prorated among the Project and the other buildings of the Complex, as reasonably determined by Landlord.

Operating Costs shall not include costs for (i) capital improvements made to the Building, other than capital improvements described in Section 4(b)(2)(C), and except for items which are generally considered maintenance and repair items, such as painting of common areas, replacement of carpet in elevator lobbies, and the like; (ii) repair, replacements and general maintenance paid by proceeds of insurance or by Tenant or other third parties; (iii) interest, amortization or other payments on loans to Landlord; (iv) depreciation; (v) leasing commissions; (vi) legal expenses for services, other than those that benefit the Project tenants generally (e.g., tax disputes); (vii) renovating or otherwise improving space for occupants of the Project or vacant space in the Project; and (viii) federal income taxes imposed on or measured by the income of Landlord from the operation of the Project.

- (3) “**Taxes**” means taxes, assessments, and governmental charges or fees whether federal, state, county or municipal, and whether they be by taxing districts or authorities presently taxing or by others, subsequently created or otherwise, and any other taxes and assessments (including non governmental assessments for common charges under a restrictive covenant or other private agreement that are not treated as part of Operating Costs) now or hereafter attributable to the Project (or its operation), excluding, however, penalties and interest thereon and federal and state taxes on income. Notwithstanding the above, if the present method of taxation changes so that in lieu of or in addition to the whole or any part of any Taxes, there is levied on Landlord a capital tax directly on the rents received therefrom or a franchise tax, assessment, or charge based, in whole or in part, upon such rents for the Project, then all such taxes, assessments, or charges, or the part thereof so based, shall be deemed to be included within the term “Taxes” for purposes hereof (it being agreed that the so-called “margin tax” codified at §§ 171.0001 *et seq.* of the Texas Tax Code (as the same may be amended from time to time, the “**Margin Tax**”) is such a tax and shall be deemed to be included within the term “Taxes” for purposes hereof). Taxes shall include the costs of consultants retained in an effort to lower Taxes and all costs included in disputing any Taxes or in seeking to lower the tax valuation of the Project. For property tax purposes, Tenant waives all rights to protest or appeal the appraised value of the Premises, as well as the Project, and all rights to receive notices of reappraisalment.
- (4) Tenant shall also pay to Landlord Tenant’s Proportionate Share of the cost of all electricity used by the Project (“**Electrical Costs**”). Such amount shall be payable in monthly installments on the Commencement Date and on the first day of each calendar month thereafter. Each installment shall be based on Landlord’s estimate of the amount due for each month. From time to time during any calendar year, Landlord may in good faith estimate or re-estimate the Electrical Costs to be due by Tenant for that calendar year and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Electrical Costs payable by Tenant shall be appropriately adjusted in accordance with the estimations.
- (5) By April 1 of each calendar year, Landlord shall furnish to Tenant a statement of Operating Costs and Electrical Costs for the previous year, in each case adjusted as provided in Section 4(b)(5), (the “**Operating Costs Statement**”). If Tenant’s estimated payments of Operating Costs or Electrical Costs under this Section 4(b) for the year covered by the Operating Costs Statement exceed Tenant’s Proportionate Share of such items as indicated in the Operating Costs Statement, then Landlord shall promptly credit or reimburse Tenant for such excess; likewise, if Tenant’s estimated payments of Operating Costs or Electrical Costs under this Section 4(b) for such year are less than Tenant’s Proportionate Share of such items as indicated in the Operating Costs Statement, then Tenant shall promptly pay Landlord such deficiency.
- (6) With respect to any calendar year or partial calendar year in which the Building is not occupied to the extent of 95% of the rentable area thereof, or Landlord is not supplying services to 95% of the rentable area thereof, the Operating Costs and Electrical Costs for such period which vary with the occupancy of the Building shall, for the purposes hereof, be increased to the amount which would have been incurred had the Building been occupied to the extent of 95% of the rentable area thereof and Landlord had been supplying services to 95% of the rentable area thereof. In no event (through “gross up” or otherwise) shall Landlord collect Operating Costs or Electrical Costs from tenants of the Building in excess of Landlord’s actual costs therefor.

5. **Delinquent Payment; Handling Charges.** All past due payments required of Tenant hereunder shall bear interest from the date due until paid at the lesser of eighteen percent per annum or the maximum lawful rate of interest (such lesser amount is referred to herein as the “**Default Rate”**); additionally, Landlord, in addition to all other rights and remedies available to it, may charge Tenant a fee equal to 3½% of the delinquent payment to reimburse Landlord for its cost and inconvenience incurred as a consequence of Tenant’s delinquency. In no event, however, shall the charges permitted under this **Section 5** or elsewhere in this Lease, to the extent they are considered to be interest under applicable Law, exceed the maximum lawful rate of interest. Notwithstanding the foregoing, the late fee referenced above shall not be charged with respect to the first occurrence (but not any subsequent occurrence) during any 12-month period that Tenant fails to make payment when due, until five business days after Landlord delivers written notice of such delinquency to Tenant. If any check is tendered by Tenant and not duly honored with good funds, Tenant shall, in addition to any other remedies available to Landlord under this Lease, pay Landlord a “NSF” fee of \$75.00, and Landlord may require, by giving written notice to Tenant (and in addition to any other rights and remedies accruing pursuant to the terms, provisions or covenants of this Lease) that all future rental payments are to be made on or before the due date by cash, cashier’s check, or money order, and that the delivery of Tenant’s personal or corporate check will no longer constitute a payment of rental as provided in this Lease. In addition, if Tenant fails in two (2) consecutive months to make rental payments within five (5) business days after the due date, Landlord, in order to reduce its administrative costs, may require, by giving written notice to Tenant (and in addition to any interest accruing pursuant to this **Section 5**, as well as any other rights and remedies accruing pursuant to the terms, provisions or covenants of this Lease), that Basic Rent is to be paid quarterly in advance instead of monthly and that all future rental payments are to be made on or before the due date by cash, cashier’s check, or money order, and that the delivery of Tenant’s personal or corporate check will no longer constitute a payment of rental as provided in this Lease. Any acceptance of a monthly rental payment or of a personal or corporate check thereafter by Landlord shall not be construed as a subsequent waiver of said rights, regardless of any notation on said check or any conditions with which Tenant offers such check to Landlord.
6. **Security Deposit.** Contemporaneously with the execution of this Lease, Tenant shall pay to Landlord the Security Deposit, which shall be held by Landlord to secure Tenant’s performance of its obligations under this Lease. The Security Deposit is not an advance payment of Rent or a measure or limit of Landlord’s damages upon an Event of Default (as defined herein). Landlord may, from time to time following an Event of Default and without prejudice to any other remedy, use all or a part of the Security Deposit to perform any obligation Tenant fails to perform hereunder. Following any such application of the Security Deposit, Tenant shall pay to Landlord on demand the amount so applied in order to restore the Security Deposit to its original amount. Subject to the requirements of, and conditions imposed by, Laws applicable to security deposits under commercial leases, Landlord shall, within the time required by applicable Law, return to Tenant the portion of the Security Deposit remaining after deducting all damages, charges and other amounts permitted by Law. Landlord and Tenant agree that such deductions shall include, without limitation, all damages and losses that Landlord has suffered or that Landlord reasonably estimates that it will suffer as a result of any breach of this Lease by Tenant. The Security Deposit may be commingled with other funds, and no interest shall be paid thereon. If Landlord transfers its interest in the Premises, Landlord may assign the Security Deposit to the transferee and, upon such transfer and the delivery to Tenant of an acknowledgement of the transferee’s responsibility for the Security Deposit as provided by Law, Landlord thereafter shall have no further liability for the return of the Security Deposit.

7. **Landlord's Obligations.**

- (a) **Services.** Landlord shall furnish to Tenant (1) water at those points of supply provided for general use of tenants of the Building; (2) heated and refrigerated air conditioning ("**HVAC**") as appropriate, at such temperatures and in such amounts as are standard for comparable buildings in the vicinity of the Building; (3) janitorial service as set forth on **Exhibit K** attached hereto; (4) elevators for ingress and egress to the floor on which the Premises are located, in common with other tenants, provided that Landlord may reasonably limit the number of operating elevators during non-business hours and holidays; and (5) electrical current during normal business hours for equipment that does not require more than 208 volts and whose electrical energy consumption does not exceed normal office and laboratory usage. Landlord shall maintain the common areas of the Project in a manner consistent with that expected in a low-rise suburban Class A office building, except for damage caused by a Tenant Party. Landlord shall keep the common areas of the Project in compliance with all Laws, except to the extent of violations of Laws caused by a Tenant Party. If Tenant desires any of the services specified in clause (2) above: (A) at any time other than between 7:00 a.m. and 6:00 p.m. on weekdays and between 8:00 a.m. and 1:00 p.m. on Saturday (in each case other than holidays), or (B) on Sunday or holidays, then such services shall be supplied to Tenant upon the written request of Tenant delivered to Landlord before 3:00 p.m. on the business day preceding such extra usage, and Tenant shall pay to Landlord the cost of such services within 30 days after Landlord has delivered to Tenant an invoice therefor. The costs incurred by Landlord in providing after-hour HVAC service to Tenant shall include costs for electricity, water, sewage, water treatment, labor, metering, filtering, and maintenance reasonably allocated by Landlord to providing such service. Such costs are currently estimated by Landlord to be \$40.00 per hour per rooftop unit, with a two-hour minimum. "**Building Holidays**" shall mean (a) New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving, Christmas Eve, Christmas Day, and the Monday following such holiday if the holiday falls on a Sunday, or the Friday preceding such holiday if the holiday falls on a Saturday and (b) other days designated by Landlord, so long as such other days are commonly recognized as holidays by other office buildings in the submarket in which the Project is located.
- (b) **Excess Utility Use.** Landlord shall not be required to furnish electrical current for equipment that requires more than 208 volts or other equipment whose electrical energy consumption exceeds normal office and laboratory usage. If Tenant's requirements for or consumption of electricity exceed the electricity to be provided by Landlord as described in **Section 7(a)**, Landlord shall, at Tenant's expense, make reasonable efforts to supply such service through the then-existing feeders and risers serving the Building and the Premises, and Tenant shall pay to Landlord the cost of such service within 30 days after Landlord has delivered to Tenant an invoice therefor. Landlord may determine the amount of such additional consumption and potential consumption by any verifiable method, including installation of a separate meter in the Premises installed, maintained, and read by Landlord, at Tenant's expense. Tenant shall not install any electrical equipment requiring special wiring or requiring voltage in excess of 208 volts unless approved in advance by Landlord, which approval shall not be unreasonably withheld. Tenant shall not install any electrical equipment requiring voltage in excess of Building capacity unless approved in advance by Landlord, which approval may be withheld in Landlord's sole discretion. The use of electricity in the Premises shall not exceed the capacity of existing feeders and risers to or wiring in the Premises. Any risers or wiring required to meet Tenant's excess electrical requirements shall, upon Tenant's written request, be installed by Landlord, at Tenant's cost, if, in Landlord's judgment, the same are necessary and shall not cause permanent damage to the Building or the Premises, cause or create a dangerous or hazardous condition, entail excessive or unreasonable alterations, repairs, or expenses, or interfere with or disturb other tenants of the Building. If Tenant uses machines or equipment in the Premises which affect the temperature otherwise maintained by the air conditioning system or otherwise overload any utility, Landlord may install supplemental air conditioning units or other supplemental equipment in the Premises, and the cost thereof, including the cost of installation, operation, use, and maintenance, in each case, plus an administrative fee of 15% of such cost, shall be paid by Tenant to Landlord within 30 days after Landlord has delivered to Tenant an invoice therefor.

- (c) **Access.** Subject to the Building rules and regulations attached as Exhibit C hereto and the other provisions of this Lease, Tenant will be provided access to the Premises 24 hours per day, seven days per week. If such access is unavailable due to force majeure or any other reason beyond Landlord's control (including construction performed by parties other than Landlord which prohibits such access), Landlord shall not be in default under this Section 7(c).

8. **Improvements; Alterations; Repairs; Maintenance.**

- (a) **Improvements; Alterations.** Improvements to the Premises shall be installed at Tenant's expense only in accordance with plans and specifications which have been previously submitted to and approved in writing by Landlord, which approval shall be governed by the provisions set forth in this Section 8(a). No alterations or physical additions in or to the Premises may be made without Landlord's prior written consent, which shall not be unreasonably withheld or delayed; however, Landlord may withhold its consent to any alteration or addition that would adversely affect (in the reasonable discretion of Landlord) (1) the Building's Structure or the Building's Systems (including the Building's restrooms or mechanical rooms), (2) exterior appearance of the Building, (3) appearance of the Building's common areas or elevator lobby areas, or (4) provision of services to other occupants of the Building. Tenant shall not paint or install lighting or decorations, signs, window or door lettering, or advertising media of any type visible from the exterior of the Premises without the prior written consent of Landlord, which consent may be withheld in Landlord's sole and absolute discretion. Notwithstanding the foregoing, Tenant shall not be required to obtain Landlord's consent for repainting, recarpeting, or other alterations, tenant improvements, alterations or physical additions to the Premises which are cosmetic in nature totaling less than \$50,000 in any single instance or series of related alterations performed within a six-month period (provided that Tenant shall not perform any improvements, alterations or additions to the Premises in stages as a means to subvert this provision), in each case provided that (A) Tenant delivers to Landlord written notice thereof, a list of contractors and subcontractors to perform the work (and certificates of insurance for each such party) and any plans and specifications therefor prior to commencing any such alterations, additions, or improvements (for informational purposes only so long as no consent is required by Landlord as required by this Lease), (B) the installation thereof does not require the issuance of any building permit or other governmental approval, or involve any core drilling or the configuration or location of any exterior or interior walls of the Building, and (C) such alterations, additions and improvements will not affect (i) the Building's Structure or the Building's Systems, (ii) the provision of services to other Building tenants, or (iii) the appearance of the Building's common areas or the exterior of the Building. Notwithstanding the foregoing, the referenced \$50,000 cost limitation shall not apply to a project involving only carpeting and/or painting, provided that the other qualifications of the immediately preceding sentence are satisfied. All alterations, additions, and improvements shall be constructed, maintained, and used by Tenant, at its risk and expense, in accordance with all Laws; Landlord's consent to or approval of any alterations, additions or improvements (or the plans therefor) shall not constitute a representation or warranty by Landlord, nor Landlord's acceptance, that the same comply with sound architectural and/or engineering practices or with all applicable Laws, and Tenant shall be solely responsible for ensuring all such compliance.
- (b) **Repairs; Maintenance.** Tenant shall maintain the Premises in a clean, safe, and operable condition, and shall not permit or allow to remain any waste or damage to any portion of the Premises. Additionally, Tenant, at its sole expense, shall repair, replace and maintain in good condition and in accordance with all Laws and the equipment manufacturer's suggested service programs, all portions of the Premises, Tenant's Off-Premises Equipment and all areas, improvements and systems exclusively serving the Premises, except with respect to those portions of the Premises that Landlord is obligated to repair, replace and maintain in connection with provision of the services set forth in Section 7(a) above. Tenant shall repair or replace, subject to Landlord's direction and supervision, any damage to the Building caused by a Tenant Party. If Tenant fails to make such repairs or replacements within 15 days after the occurrence of such damage, then Landlord may make the same at Tenant's cost. If any such damage occurs outside of the Premises, then Landlord may elect to repair such damage at Tenant's expense, rather than having Tenant repair such damage. The cost of all maintenance, repair or replacement work performed by Landlord under this Section 8 shall be paid by Tenant to Landlord within 30 days after Landlord has invoiced Tenant therefor.

- (c) **Performance of Work.** All work described in this Section 8 shall be performed only by Landlord or by contractors and subcontractors approved in writing by Landlord. Tenant shall cause all contractors and subcontractors to procure and maintain insurance coverage naming Landlord and Landlord's property management company as additional insureds against such risks, in such amounts, and with such companies as Landlord may reasonably require. Upon request by Landlord, Tenant shall provide Landlord with the identities, mailing addresses and telephone numbers of all persons performing work or supplying materials prior to beginning such construction (and if requested by Landlord, references for the company or person performing such work or supplying such materials), and Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable Laws. All such work shall be performed in accordance with all Laws and in a good and workmanlike manner so as not to damage the Building (including the Premises, the Building's Structure and the Building's Systems). Any inspections required to be performed to determine compliance with the Disabilities Act (as hereinafter defined) in connection with such work must be performed by Landlord's accessibility consultant. All such work which may affect the Building's Structure or the Building's Systems must be approved by the Building's engineer of record, at Tenant's expense and, at Landlord's election, must be performed by Landlord's usual contractor for such work. All work affecting the roof of the Building must be performed by Landlord's roofing contractor and no such work will be permitted if it would void or reduce the warranty on the roof. All cabling installed within the Premises by Tenant shall be in conformance with the standards set for the Building by Landlord at the time of such installation.
- (d) **Mechanic's Liens.** All work performed, materials furnished, or obligations incurred by or at the request of a Tenant Party shall be deemed authorized and ordered by Tenant only, and Tenant shall not permit any mechanic's liens to be filed against the Premises or the Project in connection therewith. Upon completion of any such work, Tenant shall deliver to Landlord final lien waivers from all contractors, subcontractors and materialmen who performed such work. If such a lien is filed, then Tenant shall, within 20 days after Landlord has delivered notice of the filing thereof to Tenant (or such earlier time period as may be necessary to prevent the forfeiture of the Premises, the Project or any interest of Landlord therein or the imposition of a civil or criminal fine with respect thereto), either (1) pay the amount of the lien and cause the lien to be released of record, or (2) diligently contest such lien and deliver to Landlord a bond or other security reasonably satisfactory to Landlord. If Tenant fails to timely take either such action, then Landlord may pay the lien claim, and any amounts so paid, including expenses and interest, shall be paid by Tenant to Landlord within ten days after Landlord has invoiced Tenant therefor. Landlord and Tenant acknowledge and agree that their relationship is and shall be solely that of "landlord-tenant" (thereby excluding a relationship of "owner-contractor," "owner-agent" or other similar relationships). Accordingly, all materialmen, contractors, artisans, mechanics, laborers and any other persons now or hereafter contracting with Tenant, any contractor or subcontractor of Tenant or any other Tenant Party for the furnishing of any labor, services, materials, supplies or equipment with respect to any portion of the Premises, at any time from the date hereof until the end of the Term, are hereby charged with notice that they look exclusively to Tenant to obtain payment for same. Nothing herein shall be deemed a consent by Landlord to any liens being placed upon the Premises, the Project or Landlord's interest therein due to any work performed by or for Tenant or deemed to give any contractor or subcontractor or materialman any right or interest in any funds held by Landlord to reimburse Tenant for any portion of the cost of such work. Tenant shall defend, indemnify and hold harmless Landlord and its agents and representatives from and against all claims, demands, causes of action, suits, judgments, damages and expenses (including attorneys' fees) in any way arising from or relating to the failure by any Tenant Party to pay for any work performed, materials furnished, or obligations incurred by or at the request of a Tenant Party. This indemnity provision shall survive termination or expiration of this Lease.

9. **Use.** Tenant shall continuously occupy and use the Premises only for the Permitted Use and shall comply with all Laws relating to this Lease and/or the use, condition, access to, and occupancy of the Premises and will not commit waste, overload the Building's Structure or the Building's Systems or subject the Premises to use that would damage the Premises. The population density within the Premises as a whole shall at no time exceed one person for each 215 rentable square feet in the Premises. Tenant shall not conduct second or third shift operations within the Premises; however, Tenant may use the Premises after normal business hours, so long as Tenant is not generally conducting business from the Premises after normal business hours. Notwithstanding anything in this Lease to the contrary, as between Landlord and Tenant, (a) Tenant shall bear the risk of complying with Title III of the Americans With Disabilities Act of 1990, any state laws governing handicapped access or architectural barriers, and all rules, regulations, and guidelines promulgated under such laws, as amended from time to time (the "**Disabilities Acts**") in the Premises, and (b) Landlord shall bear the risk of complying with the Disabilities Acts in the common areas of the Building, other than compliance that is necessitated by the use of the Premises for other than the Permitted Use or as a result of any alterations or additions, including any initial tenant improvement work, made by or on behalf of a Tenant Party (which risk and responsibility shall be borne by Tenant). Any inspections required to be performed to determine compliance with the Disabilities Act, whether as a result of the initial tenant improvement work or any alterations or additions made by or on behalf of a Tenant Party, must be performed by Landlord's accessibility consultant. The Premises shall not be used for any use which is disreputable, creates extraordinary fire hazards, or results in an increased rate of insurance on the Building or its contents, or for the storage of any Hazardous Materials (other than typical office supplies [e.g., photocopier toner] and then only in compliance with all Laws). Tenant shall not use any substantial portion of the Premises for a "call center," any other telemarketing use, or any credit processing use without the prior written consent of Landlord. If, because of a Tenant Party's acts or because Tenant vacates the Premises, the rate of insurance on the Building or its contents increases, then such acts shall be an Event of Default, Tenant shall pay to Landlord the amount of such increase on demand, and acceptance of such payment shall not waive any of Landlord's other rights. Tenant shall conduct its business and control each other Tenant Party so as not to create any nuisance or unreasonably interfere with other tenants or Landlord in its management of the Building.

10. **Assignment and Subletting.**

- (a) **Transfers.** Except as provided in Section 10(h), Tenant shall not, without the prior written consent of Landlord, (1) assign, transfer, or encumber this Lease or any estate or interest herein, whether directly or by operation of law, (2) permit any other entity to become Tenant hereunder by merger, consolidation, or other reorganization, (3) if Tenant is an entity other than a corporation whose stock is publicly traded, permit the transfer of an ownership interest in Tenant so as to result in a change in the current control of Tenant, (4) sublet any portion of the Premises, (5) grant any license, concession, or other right of occupancy of any portion of the Premises, or (6) permit the use of the Premises by any parties other than Tenant (any of the events listed in Sections 10(a)(1) through 10(a)(6) being a "**Transfer**").
- (b) **Consent Standards.** Landlord shall not unreasonably withhold its consent to any assignment or subletting of the Premises, provided that the proposed transferee (1) is creditworthy, (2) has a good reputation in the business community, (3) will use the Premises for the Permitted Use and will not use the Premises in any manner that would conflict with any exclusive use agreement or other similar agreement entered into by Landlord with any other tenant of the Building, (4) will not use the Premises, Building or Project in a manner that would materially increase the pedestrian or vehicular traffic to the Premises, Building or Project, (5) is not a governmental entity, or subdivision or agency thereof, (6) is not another occupant of the Building or Complex, (7) is in compliance with the regulations of the Office of Foreign Asset Control ("**OFAC**") of the Department of the Treasury or any successor entity (including those named on OFAC's Specially Designated Nationals and Blocked Persons List) and any statute, executive order (including the September 24, 2001, Executive Order Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit or Support Terrorism), or other governmental action relating thereto; and (8) is not a person or entity with whom Landlord is then, or has been within the six-month period prior to the time Tenant seeks to enter into such assignment or subletting, negotiating to lease space in the Building or Complex or any Affiliate of any such person or entity; otherwise, Landlord may withhold its consent in its sole discretion. Additionally, Landlord may withhold its consent in its sole discretion to any proposed Transfer if any Event of Default by Tenant then exists.

- (c) **Request for Consent.** If Tenant requests Landlord's consent to a Transfer, then, at least 15 days prior to the effective date of the proposed Transfer, Tenant shall provide Landlord with a written description of all terms and conditions of the proposed Transfer, copies of the proposed documentation, and the following information about the proposed transferee: name and address of the proposed transferee and any entities and persons who own, control or direct the proposed transferee; reasonably satisfactory information about its business and business history; its proposed use of the Premises; banking, financial, and other credit information reasonably requested by Landlord. Concurrently with Tenant's notice of any request for consent to a Transfer, Tenant shall pay to Landlord a fee of \$1,000 to defray Landlord's expenses in reviewing such request, and Tenant shall also reimburse Landlord immediately upon request for its reasonable attorneys' fees incurred in connection with considering any request for consent to a Transfer. If Landlord reasonably believes that the out-of-pocket costs payable to third parties to be incurred by Landlord in reviewing the proposed consent will exceed \$1,000, Landlord will first notify Tenant of such cost estimate before proceeding with such third-party expenses. If Tenant fails to consent to such additional costs and expenses within five business days after Landlord's written notification to Tenant thereof, Tenant shall be deemed to have rescinded its request for such consent.
- (d) **Conditions to Consent.** If Landlord consents to a proposed Transfer, then the proposed transferee shall deliver to Landlord a written agreement whereby it expressly assumes Tenant's obligations hereunder; however, any transferee of less than all of the space in the Premises shall be liable only for obligations under this Lease that are properly allocable to the space subject to the Transfer for the period of the Transfer. No Transfer shall release Tenant from its obligations under this Lease, but rather Tenant and its transferee shall be jointly and severally liable therefor. Landlord's consent to any Transfer shall not waive Landlord's rights as to any subsequent Transfers. If an Event of Default occurs while the Premises or any part thereof are subject to a Transfer, then Landlord, in addition to its other remedies, may collect directly from such transferee all rents becoming due to Tenant and apply such rents against Rent. Tenant authorizes its transferees to make payments of rent directly to Landlord upon receipt of notice from Landlord to do so following the occurrence of an Event of Default hereunder. Tenant shall pay for the cost of any demising walls or other improvements necessitated by a proposed subletting or assignment.
- (e) **Attornment by Subtenants.** Each sublease by Tenant hereunder shall be subject and subordinate to this Lease and to the matters to which this Lease is or shall be subordinate, and each subtenant by entering into a sublease is deemed to have agreed that in the event of termination, re-entry or dispossession by Landlord under this Lease, Landlord may, at its option, take over all of the right, title and interest of Tenant, as sublandlord, under such sublease, and such subtenant shall at Landlord's option, attorn to Landlord pursuant to the then executory provisions of such sublease, except that Landlord shall not be (1) liable for any previous act or omission of Tenant under such sublease, (2) subject to any counterclaim, offset or defense that such subtenant might have against Tenant, (3) bound by any previous modification of such sublease not approved by Landlord in writing or by any rent or additional rent or advance rent which such subtenant might have paid for more than the current month to Tenant, and all such rent shall remain due and owing, notwithstanding such advance payment, (4) bound by any security or advance rental deposit made by such subtenant which is not delivered or paid over to Landlord and with respect to which such subtenant shall look solely to Tenant for refund or reimbursement, or (5) obligated to perform any work in the subleased space or to prepare it for occupancy, and in connection with such attornment, the subtenant shall execute and deliver to Landlord any instruments Landlord may reasonably request to evidence and confirm such attornment. Each subtenant or licensee of Tenant shall be deemed, automatically upon and as a condition of its occupying or using the Premises or any part thereof, to have agreed to be bound by the terms and conditions set forth in this Section 10(e). The provisions of this Section 10(e) shall be self-operative, and no further instrument shall be required to give effect to this provision.

- (t) **Cancellation.** Landlord may, within 30 days after submission of Tenant's written request for Landlord's consent to an assignment or subletting, cancel this Lease as to the portion of the Premises proposed to be sublet or assigned as of the date the proposed Transfer is to be effective. If Landlord cancels this Lease as to any portion of the Premises, then this Lease shall cease for such portion of the Premises and Tenant shall pay to Landlord all Rent accrued through the cancellation date relating to the portion of the Premises covered by the proposed Transfer. Thereafter, Landlord may lease such portion of the Premises to the prospective transferee (or to any other person) without liability to Tenant. Notwithstanding the foregoing, if Landlord provides written notification to Tenant of its election to cancel this Lease as to any portion of the Premises as provided above, Tenant may rescind its proposed assignment or subletting of all or any portion of the Premises by notifying Landlord in writing within three business days following Landlord's written cancellation notice.
- (g) **Additional Compensation.** Tenant shall pay to Landlord, immediately upon receipt thereof, fifty percent (50%) of the excess of (t) all compensation received by Tenant for a Transfer less the actual out-of-pocket costs reasonably incurred by Tenant with unaffiliated third parties (including, without limitation, brokerage commissions, tenant finish work and fees paid to Landlord in connection with such Transfer) in connection with such Transfer (such costs shall be amortized on a straight-line basis over the term of the Transfer in question) over (u) the Rent allocable to the portion of the Premises covered thereby.
- (h) **Permitted Transfers.** Notwithstanding Section 10(a), Tenant may Transfer all or part of its interest in this Lease or all or part of the Premises (a "**Permitted Transfer**") to the following types of entities (a "**Permitted Transferee**") without the written consent of Landlord:
- (1) an Affiliate of Tenant;
 - (2) any corporation, limited partnership, limited liability partnership, limited liability company or other business entity in which or with which Tenant, or its corporate successors or assigns, is merged or consolidated, in accordance with applicable statutory provisions governing merger and consolidation of business entities, so long as (A) Tenant's obligations hereunder are assumed by the entity surviving such merger or created by such consolidation; and (B) the Tangible Net Worth of the surviving or created entity is not less than the greater of (i) the Tangible Net Worth of Tenant as of the date hereof, or (ii) the Tangible Net Worth of Tenant as of the date of the Permitted Transfer; or
 - (3) any corporation, limited partnership, limited liability partnership, limited liability company or other business entity acquiring all or substantially all of Tenant's assets if such entity's Tangible Net Worth after such acquisition is not less than the greater of (A) the Tangible Net Worth of Tenant as of the date hereof, or (B) the Tangible Net Worth of Tenant as of the date of the Permitted Transfer.

Tenant shall promptly notify Landlord of any such Permitted Transfer. Tenant shall remain liable for the performance of all of the obligations of Tenant hereunder, or if Tenant no longer exists because of a merger, consolidation, or acquisition, the surviving or acquiring entity shall expressly assume in writing the obligations of Tenant hereunder. Additionally, the Permitted Transferee shall comply with all of the terms and conditions of this Lease, including the Permitted Use, and the use of the Premises by the Permitted Transferee may not violate any other agreements affecting the Premises, the Building, Landlord or other tenants of the Building. No later than 30 days after the effective date of any Permitted Transfer, Tenant agrees to furnish Landlord with (A) copies of the instrument effecting any of the foregoing Transfers, (B) documentation establishing Tenant's satisfaction of the requirements set forth above applicable to any such Transfer, (C) evidence of insurance as required under this Lease with respect to the Permitted Transferee, and (D) evidence of compliance with the regulations of OFAC and any statute, executive order (including the September 24, 2001, Executive Order Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism), or other governmental action relating thereto, including the name and address of the Permitted Transferee and any entities and persons who own, control or direct the Permitted Transferee. The occurrence of a Permitted Transfer shall not waive Landlord's rights as to any subsequent Transfers. "**Tangible Net Worth**" means the excess of total assets over total liabilities, in each case as determined in accordance with generally accepted accounting principles consistently applied ("**GAAP**"), excluding, however, from the determination of total assets all assets which would be classified as intangible assets under GAAP including goodwill, licenses, patents, trademarks, trade names, copyrights, and franchises. Any subsequent Transfer by a Permitted Transferee shall be subject to the terms of this Section 10.

11. **Insurance; Waivers; Subrogation; Indemnity.**

- (a) **Tenant's Insurance.** Effective as of the earlier of (1) the date Tenant enters or occupies the Premises, or (2) the Commencement Date, and continuing throughout the Term, Tenant shall maintain the following insurance policies: (A) commercial general liability insurance in amounts of \$3,000,000 per occurrence (which may be satisfied by Tenant's obtaining primary coverage in an amount not less than \$2,000,000 and umbrella coverage in an amount equal to the difference between \$3,000,000 and the amount of such primary coverage) or, following the expiration of the initial Term, such other amounts as Landlord may from time to time reasonably require (and, if the use and occupancy of the Premises include any activity or matter that is or may be excluded from coverage under a commercial general liability policy [e.g., the sale, service or consumption of alcoholic beverages], Tenant shall obtain such endorsements to the commercial general liability policy or otherwise obtain insurance to insure all liability arising from such activity or matter in such amounts as Landlord may reasonably require), insuring Tenant, Landlord, Landlord's property management company, and, if requested in writing by Landlord, Landlord's Mortgagee, against all liability for injury to or death of a person or persons or damage to property arising from the use and occupancy of the Premises and (without implying any consent by Landlord to the installation thereof) the installation, operation, maintenance, repair or removal of Tenant's Off-Premises Equipment, (B) insurance covering the full value of all alterations and improvements and betterments in the Premises, naming Landlord and Landlord's Mortgagee as additional loss payees as their interests may appear, (C) insurance covering the full value of all furniture, trade fixtures and personal property (including property of Tenant or others) in the Premises or otherwise placed in the Project by or on behalf of a Tenant Party (including Tenant's Off-Premises Equipment), (D) contractual liability insurance sufficient to cover Tenant's indemnity obligations hereunder (but only if such contractual liability insurance is not already included in Tenant's commercial general liability insurance policy), (E) worker's compensation insurance, and (F) business interruption insurance in an amount reasonably acceptable to Landlord. Tenant's insurance shall provide primary coverage to Landlord when any policy issued to Landlord provides duplicate or similar coverage, and in such circumstance Landlord's policy will be excess over Tenant's policy. The commercial general liability insurance to be maintained by Tenant may have a deductible of no more than \$5,000 per occurrence; the property insurance to be maintained by Tenant may have a deductible of no more than \$10,000 per occurrence; and, all other insurance to be maintained by Tenant shall have no deductible. Tenant shall furnish to Landlord certificates of such insurance and such other evidence satisfactory to Landlord of the maintenance of all insurance coverages required hereunder at least ten days prior to the earlier of the Commencement Date or the date Tenant enters or occupies the Premises, on or before the date of each renewal of said insurance, and Tenant shall obtain a written obligation on the part of each insurance company to notify Landlord at least 30 days before cancellation or a material change of any such insurance policies. All such insurance policies shall be in form, and issued by companies with a Best's rating of A:VII or better, reasonably satisfactory to Landlord. If Tenant fails to comply with the foregoing insurance requirements or to deliver to Landlord the certificates or evidence of coverage required herein and such failure continues for five days following Landlord's receipt of an additional notice from Tenant that includes the following phrase in bold, all caps type: "**WARNING: FAILURE TO PROVIDE EVIDENCE OF INSURANCE COVERAGE IN COMPLIANCE WITH THE REQUIREMENTS OF THE LEASE FIVE BUSINESS DAYS FOLLOWING RECEIPT OF THIS NOTICE WILL ALLOW LANDLORD TO PROCURE INSURANCE ON TENANT'S BEHALF AND CHARGE COSTS TO TENANT,**" then in such case, Landlord, in addition to any other remedy available pursuant to this Lease or otherwise, may, but shall not be obligated to, obtain such insurance and Tenant shall pay to Landlord on demand the premium costs thereof, plus an administrative fee of 15% of such cost.
- (b) **Landlord's Insurance.** Throughout the Term of this Lease, Landlord shall maintain, as a minimum, the following insurance policies: (1) property insurance for the Building's replacement value (excluding property required to be insured by Tenant), less a commercially-reasonable deductible if Landlord so chooses, and (2) commercial general liability insurance in an amount of not less than \$3,000,000. Landlord may, but is not obligated to, maintain such other insurance and additional coverages as it may deem necessary. The cost of all insurance carried by Landlord with respect to the Project shall be included in Operating Costs. The foregoing insurance policies and any other insurance carried by Landlord shall be for the sole benefit of Landlord and under Landlord's sole control, and Tenant shall have no right or claim to any proceeds thereof or any other rights thereunder.

- (c) **No Subrogation; Waiver of Property Claims.** Landlord and Tenant each waives any claim it might have against the other for any damage to or theft, destruction, loss, or loss of use of any property, to the extent the same is insured against under any insurance policy of the types described in this Section 11 that covers the Project, the Premises, Landlord's or Tenant's fixtures, personal property, leasehold improvements, or business (including any applicable deductibles), or is required to be insured against under the terms hereof, regardless of whether the negligence of the other party caused such Loss (defined below). Additionally, Tenant waives any claim it may have against Landlord for any Loss to the extent such Loss is caused by a terrorist act. Each party shall cause its insurance carrier to endorse all applicable policies waiving the carrier's rights of recovery under subrogation or otherwise against the other party. Notwithstanding any provision in this Lease to the contrary, Landlord, its agents, employees and contractors shall not be liable to Tenant or to any party claiming by, through or under Tenant for (and Tenant hereby releases Landlord and its servants, agents, contractors, employees and invitees from any claim or responsibility for) any damage to or destruction, loss, or loss of use, or theft of any property of any Tenant Party located in or about the Project, caused by casualty, theft, fire, third parties or any other matter or cause, **regardless of whether the negligence of any party caused such loss in whole or in part; however the release provided for in this sentence shall not apply to the gross negligence or willful misconduct of Landlord and its servants, agents, contractors, employees and invitees.** Tenant acknowledges that Landlord shall not carry insurance on, and shall not be responsible for damage to, any property of any Tenant Party located in or about the Project.
- (d) **Indemnity.** Subject to Section 11(c), Tenant shall defend, indemnify, and hold harmless Landlord and its representatives and agents from and against all claims, demands, liabilities, causes of action, suits, judgments, damages, and expenses (including reasonable attorneys' fees) arising from any injury to or death of any person or the damage to or theft, destruction, loss, or loss of use of, any property or inconvenience (a "**Loss**") (1) occurring in or on the Project (other than within the Premises) but only to the extent caused by the negligence or willful misconduct of any Tenant Party, (2) occurring in the Premises, or (3) arising out of the installation, operation, maintenance, repair or removal of any property of any Tenant Party located in or about the Project, including Tenant's Off-Premises Equipment to the extent caused by the negligence or willful misconduct of any Tenant Party. **It being agreed that clauses (2) and (3) of this indemnity are intended to indemnify Landlord and its agents against the consequences of their own negligence or fault, even when Landlord or its agents are jointly, comparatively, contributively, or concurrently negligent with Tenant, and even though any such claim, cause of action or suit is based upon or alleged to be based upon the strict liability of Landlord or its agents; however, such indemnity shall not apply to the sole or gross negligence or willful misconduct of Landlord and its agents.** Subject to Section 11(c), Landlord shall defend, indemnify, and hold harmless Tenant and its agents from and against all claims, demands, liabilities, causes of action, suits, judgments, damages, and expenses (including reasonable attorneys' fees) for any Loss arising from any occurrence in or on the Project's common areas to the extent caused by the negligence or willful misconduct of Landlord or its agents. The indemnities set forth in this Lease shall survive termination or expiration of this Lease and shall not terminate or be waived, diminished or affected in any manner by any abatement or apportionment of Rent under any provision of this Lease. If any proceeding is filed for which indemnity is required hereunder, the indemnifying party agrees, upon request therefor, to defend the indemnified party in such proceeding at its sole cost utilizing counsel satisfactory to the indemnified party.

12. **Subordination; Attornment; Notice to Landlord's Mortgagee.**

- (a) **Subordination.** This Lease shall be subordinate to any deed of trust, mortgage, or other security instrument (each, a "**Mortgage**"), or any ground lease master lease, or primary lease (each, a "**Primary Lease**"), that now or hereafter covers all or any part of the Premises (the mortgagee under any such Mortgage, beneficiary under any such deed of trust, or the lessor under any such Primary Lease is referred to herein as a "**Landlord's Mortgagee**"). Any Landlord's Mortgagee may elect, at any time, unilaterally, to make this Lease superior to its Mortgage, Primary Lease, or other interest in the Premises by so notifying Tenant in writing. The provisions of this Section shall be self-operative and no further instrument of subordination shall be required; however, in confirmation of such subordination, Tenant shall execute and return to Landlord (or such other party designated by Landlord) within ten days after written request therefor such documentation, in recordable form if required, as a Landlord's Mortgagee may reasonably request to evidence the subordination of this Lease to such Landlord's Mortgagee's Mortgage or Primary Lease (including a subordination, non-disturbance and attornment agreement) or, if the Landlord's Mortgagee so elects, the subordination of such Landlord's Mortgagee's Mortgage or Primary Lease to this Lease.

- (b) **Attornment.** Tenant shall attorn to any party succeeding to Landlord's interest in the Premises, whether by purchase, foreclosure, deed in lieu of foreclosure, power of sale, termination of lease, or otherwise, upon such party's request, and shall execute such agreements confirming such attornment as such party may reasonably request.
- (c) **Notice to Landlord's Mortgagee.** Tenant shall not seek to enforce any remedy it may have for any default on the part of Landlord without first giving written notice by certified mail, return receipt requested, specifying the default in reasonable detail, to any Landlord's Mortgagee whose address has been given to Tenant, and affording such Landlord's Mortgagee a reasonable opportunity to perform Landlord's obligations hereunder.
- (d) **Landlord's Mortgagee's Protection Provisions.** If Landlord's Mortgagee shall succeed to the interest of Landlord under this Lease, Landlord's Mortgagee shall not be: (1) liable for any act or omission of any prior lessor (including Landlord); (2) bound by any rent or additional rent or advance rent which Tenant might have paid for more than the current month to any prior lessor (including Landlord), and all such rent shall remain due and owing, notwithstanding such advance payment; (3) bound by any security or advance rental deposit made by Tenant which is not delivered or paid over to Landlord's Mortgagee and with respect to which Tenant shall look solely to Landlord for refund or reimbursement; (4) bound by any termination, amendment or modification of this Lease made without Landlord's Mortgagee's consent and written approval, except for those terminations, amendments and modifications permitted to be made by Landlord without Landlord's Mortgagee's consent pursuant to the terms of the loan documents between Landlord and Landlord's Mortgagee; (5) subject to the defenses which Tenant might have against any prior lessor (including Landlord); and (6) subject to the offsets which Tenant might have against any prior lessor (including Landlord) except for those offset rights which (A) are expressly provided in this Lease, (B) relate to periods of time following the acquisition of the Building by Landlord's Mortgagee, and (C) Tenant has provided written notice to Landlord's Mortgagee and provided Landlord's Mortgagee a reasonable opportunity to cure the event giving rise to such offset event. Landlord's Mortgagee shall have no liability or responsibility under or pursuant to the terms of this Lease or otherwise after it ceases to own an interest in the Project. Nothing in this Lease shall be construed to require Landlord's Mortgagee to see to the application of the proceeds of any loan, and Tenant's agreements set forth herein shall not be impaired on account of any modification of the documents evidencing and securing any loan.
13. **Rules and Regulations.** Tenant shall comply with the rules and regulations of the Project which are attached hereto as Exhibit C. Landlord may, from time to time, change such rules and regulations for the safety, care, or cleanliness of the Project and related facilities, provided that such changes are applicable to all tenants of the Project, will not unreasonably interfere with Tenant's use of the Premises and are enforced by Landlord in a non discriminatory manner. Tenant shall be responsible for the compliance with such rules and regulations by each Tenant Party.
14. **Condemnation.**
- (a) **Total Taking.** If the entire Building or Premises are taken by right of eminent domain or conveyed in lieu thereof (a "**Taking**"), this Lease shall terminate as of the date of the Taking.
- (b) **Partial Taking - Tenant's Rights.** If any part of the Building becomes subject to a Taking and such Taking will prevent Tenant from conducting on a permanent basis its business in the Premises in a manner reasonably comparable to that conducted immediately before such Taking, then Tenant may terminate this Lease as of the date of such Taking by giving written notice to Landlord within 30 days after the Taking, and Basic Rent and Additional Rent shall be apportioned as of the date of such Taking. If Tenant does not terminate this Lease, then Rent shall be abated on a reasonable basis as to that portion of the Premises rendered untenable by the Taking.
- (c) **Partial Taking - Landlord's Rights.** If any material portion, but less than all, of the Building becomes subject to a Taking, or if Landlord is required to pay any of the proceeds arising from a Taking to a Landlord's Mortgagee, then Landlord may terminate this Lease by delivering written notice thereof to Tenant within 30 days after such Taking, and Basic Rent and Additional Rent shall be apportioned as of the date of such Taking. If Landlord does not so terminate this Lease, then this Lease will continue, but if any portion of the Premises has been taken, Rent shall abate as provided in the last sentence of Section 14(b).

- (d) **Temporary Taking.** If all or any portion of the Premises becomes subject to a Taking for a limited period of time (i.e., twelve (12) months or less), this Lease shall remain in full force and effect and Tenant shall continue to perform all of the terms, conditions and covenants of this Lease, including the payment of Basic Rent and all other amounts required hereunder. If any such temporary Taking terminates prior to the expiration of the Term, Tenant shall restore the Premises as nearly as possible to the condition prior to such temporary Taking, at Tenant's sole cost and expense. Landlord shall be entitled to receive the entire award for any such temporary Taking, except that Tenant shall be entitled to receive the price of such award which (1) compensates Tenant for its loss of use of the Premises within the Term and (2) reimburses Tenant for the reasonable out-of-pocket costs actually incurred by Tenant to restore the Premises as required by this Section 14(d).
- (e) **Award.** If any Taking occurs, then Landlord shall receive the entire award or other compensation for the Land, the Building, and other improvements taken; however, Tenant may separately pursue a claim (to the extent it will not reduce Landlord's award) against the condemner for the value of Tenant's personal property which Tenant is entitled to remove under this Lease, moving costs, loss of business, and other claims it may have.

15. **Fire or Other Casualty.**

- (a) **Repair Estimate.** If the Premises or the Building are partially damaged by fire or other casualty (a "**Casualty**"), Landlord shall, within 60 days after such Casualty (such limit shall be 75 days in the case of a total casualty [meaning that no significant portion of the above-ground improvements are salvageable]), deliver to Tenant a good faith estimate (the "**Damage Notice**") of the time needed to repair the damage caused by such Casualty.
- (b) **Tenant's Rights.** If a material portion of the Premises is damaged by Casualty such that Tenant is prevented from conducting its business in the Premises in a manner reasonably comparable to that conducted immediately before such Casualty and Landlord estimates that the damage caused thereby cannot be repaired within 180 days after the Casualty in the case of a partial Building casualty (such limit shall be 270 days in the case of a total casualty [as described above]) (the "**Repair Period**"), then Tenant may terminate this Lease by delivering written notice to Landlord of its election to terminate within 30 days after the Damage Notice has been delivered to Tenant.
- (c) **Landlord's Rights.** If a Casualty damages the Premises or a material portion of the Building and (1) Landlord estimates that the damage to the Premises cannot be repaired within the Repair Period, (2) the damage to the Premises exceeds 50% of the replacement cost thereof (excluding foundations and footings), as estimated by Landlord, and such damage occurs during the last two years of the Term, (3) regardless of the extent of damage to the Premises, the damage is not fully covered by Landlord's insurance policies or Landlord makes a good faith determination that restoring the Building would be uneconomical, or (4) Landlord is required to pay any insurance proceeds arising out of the Casualty to a Landlord's Mortgagee, then Landlord may terminate this Lease by giving written notice of its election to terminate within 30 days after the Damage Notice has been delivered to Tenant.
- (d) **Repair Obligation.** If neither party elects to terminate this Lease following a Casualty, then Landlord shall, within a reasonable time after such Casualty, begin to repair the Premises and shall proceed with reasonable diligence to restore the Premises to substantially the same condition as they existed immediately before such Casualty; however, Landlord shall not be required to repair or replace any alterations or betterments within the Premises (which shall be promptly and with reasonable diligence repaired and restored by Tenant at Tenant's sole cost and expense) or any furniture, equipment, trade fixtures or personal property of Tenant or others in the Premises or the Building, and Landlord's obligation to repair or restore the Premises shall be limited to the extent of the insurance proceeds actually received by Landlord for the Casualty in question. If this Lease is terminated under the provisions of this Section 15, Landlord shall be entitled to that portion of the proceeds of the insurance policies providing coverage for all alterations, improvements and betterments in the Premises to the extent allocable to the unamortized balance of the Allowance provided for such improvements (as amortized straight-line across the initial Term in monthly increments).
- (e) **Abatement of Rent.** If the Premises are damaged by Casualty, Rent for the portion of the Premises rendered untenantable by the damage shall be abated on a reasonable basis from the date of damage until such portion of the Premises is tenantable (or until the date of termination of this Lease by Landlord or Tenant as provided above, as the case may be), unless the willful misconduct of a Tenant Party caused such damage, in which case, Tenant shall continue to pay Rent without abatement.

16. **Personal Property Taxes.** Tenant shall be liable for all taxes levied or assessed against personal property, furniture, or fixtures placed by Tenant in the Premises or in or on the Building or Project. If any taxes for which Tenant is liable are levied or assessed against Landlord or Landlord's property and Landlord elects to pay the same, or if the assessed value of Landlord's property is increased by inclusion of such personal property, furniture or fixtures and Landlord elects to pay the taxes based on such increase, then Tenant shall pay to Landlord, within 30 days following written request therefor, the part of such taxes for which Tenant is primarily liable hereunder; however, Landlord shall not pay such amount if Tenant notifies Landlord that it will contest the validity or amount of such taxes before Landlord makes such payment, and thereafter diligently proceeds with such contest in accordance with Law and if the non-payment thereof does not pose a threat of loss or seizure of the Project or interest of Landlord therein or impose any fee or penalty against Landlord.
17. **Events of Default.** Each of the following occurrences shall be an "**Event of Default**":
- (a) **Payment Default.** Tenant's failure to pay Rent within five days after Landlord has delivered written notice to Tenant that the same is due; however, an Event of Default shall occur hereunder without any obligation of Landlord to give any notice if Tenant fails to pay Rent when due and, during the 12 month interval preceding such failure, Landlord has given Tenant written notice of failure to pay Rent on one or more occasions;
 - (b) **Abandonment.** Tenant (1) abandons or vacates the Premises or any substantial portion thereof or (2) fails to continuously operate its business in the Premises, without, in either case, first providing Landlord with five days, prior written notice thereof;
 - (c) **Estoppel.** Tenant fails to provide any estoppel certificate after Landlord's written request therefor pursuant to Section 25(e) and such failure shall continue for five days after Landlord's second written notice thereof to Tenant;
 - (d) **Insurance.** Tenant fails to procure, maintain and deliver to Landlord evidence of the insurance policies and coverages as required under Section 11(a);
 - (e) **Mechanic's Liens.** Tenant fails to pay and release of record, or diligently contest and bond around, any mechanic's lien filed against the Premises or the Project for any work performed, materials furnished, or obligation incurred by or at the request of Tenant, within the time and in the manner required by Section 8(d);
 - (f) **Other Defaults.** Tenant's failure to perform, comply with, or observe any other agreement or obligation of Tenant under this Lease and the continuance of such failure for a period of more than 30 days after Landlord has delivered to Tenant written notice thereof; however, if such failure cannot be cured within such 30-day period (thus excluding, for example, Tenant's obligation to provide Landlord evidence of Tenant's insurance coverage) and Tenant commences to cure such failure within such 30-day period and thereafter diligently pursues such cure to completion, then such failure shall not be an Event of Default unless it is not fully cured within an additional 90 days after the expiration of the 30-day period; and
 - (g) **Insolvency.** The filing of a petition by or against Tenant (the term "Tenant" shall include, for the purpose of this Section 17(g), any guarantor of Tenant's obligations hereunder) (1) in any bankruptcy or other insolvency proceeding; (2) seeking any relief under any state or federal debtor relief law; (3) for the appointment of a liquidator or receiver for all or substantially all of Tenant's property or for Tenant's interest in this Lease; (4) for the reorganization or modification of Tenant's capital structure; or (5) in any assignment for the benefit of creditors proceeding; however, if such a petition is filed against Tenant, then such filing shall not be an Event of Default unless Tenant fails to have the proceedings initiated by such petition dismissed within 90 days after the filing thereof.

18. **Remedies.** Upon any Event of Default, Landlord may, in addition to all other rights and remedies afforded Landlord hereunder or by law or equity (including, without limitation, the rights to enforce specific performance or seek injunctive relief), take any one or more of the following actions:
- (a) **Termination of Lease.** Terminate this Lease by giving Tenant written notice thereof, in which event Tenant shall pay to Landlord the sum of (1) to the extent not already recovered pursuant to Section 18(b), the unamortized Leasing Costs, amortized straight-line over the initial Term of this Lease, with such amortization to cease upon the date of termination, (2) all Rent accrued hereunder through the date of termination, (3) all amounts due under Section 19(a), and (4) an amount equal to (A) the total Rent that Tenant would have been required to pay for the remainder of the Term discounted to present value at a per annum rate equal to the "Prime Rate" as published on the date this Lease is terminated by The Wall Street Journal, Southwest Edition, in its listing of "Money Rates" minus one percent, minus (B) the then present fair rental value of the Premises for such period, similarly discounted;
 - (b) **Termination of Possession.** Terminate Tenant's right to possess the Premises without terminating this Lease by giving written notice thereof to Tenant, in which event Tenant shall pay to Landlord (1) the unamortized Leasing Costs, amortized straight-line over the initial Term of this Lease, with such amortization to cease upon the date of termination of possession, (2) all Rent and other amounts accrued hereunder to the date of termination of possession, (3) all amounts due from time to time under Section 19(a) and (4) all Rent and other net sums required hereunder to be paid by Tenant during the remainder of the Term, diminished by any net sums thereafter received by Landlord through reletting the Premises during such period, after deducting all costs incurred by Landlord in reletting the Premises. If Landlord elects to proceed under this Section 18(b), Landlord may remove all of Tenant's property from the Premises and store the same in a public warehouse or elsewhere at the cost of, and for the account of, Tenant, without becoming liable for any loss or damage which may be occasioned thereby. To the extent required by law, Landlord shall use reasonable efforts to relet the Premises on such terms as Landlord in its sole discretion may determine (including a term different from the Term, rental concessions, and alterations to, and improvement of, the Premises); however, Landlord shall not be obligated to relet the Premises before leasing other portions of the Building or Complex and Landlord shall not be obligated to accept any prospective tenant proposed by Tenant unless such proposed tenant meets all of Landlord's leasing criteria. Landlord shall not be liable for, nor shall Tenant's obligations hereunder be diminished because of, Landlord's failure to relet the Premises or to collect rent due for such reletting. Tenant shall not be entitled to the excess of any consideration obtained by reletting over the Rent due hereunder. Reentry by Landlord in the Premises shall not affect Tenant's obligations hereunder for the unexpired Term; rather, Landlord may, from time to time, bring an action against Tenant to collect amounts due by Tenant, without the necessity of Landlord's waiting until the expiration of the Term. Unless Landlord delivers written notice to Tenant expressly stating that it has elected to terminate this Lease, all actions taken by Landlord to dispossess or exclude Tenant from the Premises shall be deemed to be taken under this Section 18(b). If Landlord elects to proceed under this Section 18(b), it may at any time elect to terminate this Lease under Section 18(a);
 - (c) **Perform Acts on Behalf of Tenant.** Perform any act Tenant is obligated to perform under the terms of this Lease (and enter upon the Premises in connection therewith if necessary) in Tenant's name and on Tenant's behalf, without being liable for any claim for damages therefor, and Tenant shall reimburse Landlord on demand for any expenses which Landlord may incur in thus effecting compliance with Tenant's obligations under this Lease (including, but not limited to, collection costs and legal expenses), plus interest thereon at the Default Rate;
 - (d) **Suspension of Services.** Suspend any services required to be provided by Landlord hereunder without being liable for any claim for damages therefor; or
 - (e) **Alteration of Locks.** Additionally, with or without notice, and to the extent permitted by Law, Landlord may alter locks or other security devices at the Premises to deprive Tenant of access thereto, and Landlord shall not be required to provide a new key or right of access to Tenant.
19. **Payment by Tenant; Non-Waiver; Cumulative Remedies.**
- (a) **Payment by Tenant.** Upon any Event of Default, Tenant shall pay to Landlord all costs incurred by Landlord (including court costs and reasonable attorneys' fees and expenses) in (1) obtaining possession of the Premises, (2) removing and storing Tenant's or any other occupant's property, (3) repairing, restoring, altering, remodeling, or otherwise putting the Premises into condition acceptable to a new tenant, (4) if Tenant is dispossessed of the Premises and this Lease is not terminated, reletting all or any part of the Premises (including brokerage commissions, cost of tenant finish work, and other costs incidental to such reletting), (5) performing Tenant's obligations which Tenant failed to perform, and (6) enforcing, or advising Landlord of, its rights, remedies, and recourses arising out of the default. To the full extent permitted by law, Landlord and Tenant agree the federal and state courts of the state in which the Premises are located shall have exclusive jurisdiction over any matter relating to or arising from this Lease and the parties' rights and obligations under this Lease.

- (b) **No Waiver.** Landlord's acceptance of Rent following an Event of Default shall not waive Landlord's rights regarding such Event of Default. No waiver by Landlord of any violation or breach of any of the terms contained herein shall waive Landlord's rights regarding any future violation of such term. Landlord's acceptance of any partial payment of Rent shall not waive Landlord's rights with regard to the remaining portion of the Rent that is due, regardless of any endorsement or other statement on any instrument delivered in payment of Rent or any writing delivered in connection therewith; accordingly, Landlord's acceptance of a partial payment of Rent shall not constitute an accord and satisfaction of the full amount of the Rent that is due.
- (c) **Cumulative Remedies.** Any and all remedies set forth in this Lease: (1) shall be in addition to any and all other remedies Landlord may have at law or in equity, (2) shall be cumulative, and (3) may be pursued successively or concurrently as Landlord may elect. The exercise of any remedy by Landlord shall not be deemed an election of remedies or preclude Landlord from exercising any other remedies in the future.
20. **Landlord's Lien.** In addition to any statutory landlord's lien now or hereafter enacted, Tenant grants to Landlord, to secure performance of Tenant's obligations hereunder, a security interest in all of Tenant's property situated in or upon, or used in connection with, the Premises or the Project, and all proceeds thereof (except merchandise sold in the ordinary course of business) (collectively, the "**Collateral**"), and the Collateral shall not be removed from the Premises or the Project without the prior written consent of Landlord until all obligations of Tenant have been fully performed. Such personalty thus encumbered includes specifically all trade and other fixtures for the purpose of this Section 20 and inventory, equipment, contract rights, accounts receivable and the proceeds thereof. Upon the occurrence of an Event of Default, Landlord may, in addition to all other remedies, without notice or demand except as provided below, exercise the rights afforded to a secured party under the Uniform Commercial Code of the state in which the Premises are located (the "**UCC**"). To the extent the UCC requires Landlord to give to Tenant notice of any act or event and such notice cannot be validly waived before a default occurs, then five-days' prior written notice thereof shall be reasonable notice of the act or event. In order to perfect such security interest, Landlord may file any financing statement or other instrument necessary at Tenant's expense at the state and county Uniform Commercial Code filing offices. Tenant grants to Landlord a power of attorney to execute and file any financing statement or other instrument necessary to perfect Landlord's security interest under this Section 20, which power is coupled with an interest and is irrevocable during the Term. Landlord may also file a copy of this Lease as a financing statement to perfect its security interest in the Collateral. Within ten days following written request therefor, Tenant shall execute financing statements to be filed of record to perfect Landlord's security interest in the Collateral. Notwithstanding the foregoing to the contrary, Landlord agrees that upon request by Tenant, and further provided that no Event of Default is then in existence, Landlord will execute and deliver an agreement to Tenant's supplier or institutional financial source in a form mutually acceptable to both parties, whereby Landlord will subordinate Landlord's lien to the security interest of Tenant's supplier or institutional financial source, subject to the terms and provisions of such separate agreement.
21. **Surrender of Premises.** No act by Landlord shall be deemed an acceptance of a surrender of the Premises, and no agreement to accept a surrender of the Premises shall be valid unless it is in writing and signed by Landlord. At the expiration or termination of this Lease, Tenant shall deliver to Landlord the Premises with all improvements located therein in good repair and condition, free of Hazardous Materials placed on the Premises during the Term, broom-clean, reasonable wear and tear (and condemnation and Casualty damage not caused by Tenant, as to which Sections 14 and 15 shall control) excepted, and shall deliver to Landlord all keys to the Premises. Provided that Tenant has performed all of its obligations hereunder, Tenant may remove all unattached trade fixtures, furniture, and personal property placed in the Premises or elsewhere in the Building by Tenant (but Tenant may not remove any such item which was paid for, in whole or in part, by Landlord or any wiring or cabling unless Landlord requires such removal). Additionally, at Landlord's option, Tenant shall remove such alterations, additions, improvements, trade fixtures, personal property, equipment, wiring, conduits, cabling, and furniture (including Tenant's Off Premises Equipment) as Landlord may request; however, Tenant shall not be required to remove any addition or improvement to the Premises or the Project if Landlord has specifically agreed in writing that the improvement or addition in question need not be removed. Tenant shall repair all damage caused by such removal. All items not so removed shall, at Landlord's option, be deemed to have been abandoned by Tenant and may be appropriated, sold, stored, destroyed, or otherwise disposed of by Landlord without notice to Tenant and without any obligation to account for such items; any such disposition shall not be considered a strict foreclosure or other exercise of Landlord's rights in respect of the security interest granted under Section 20. The provisions of this Section 21 shall survive the end of the Term.

22. **Holding Over.**

- (a) If Tenant fails to vacate the Premises at the end of the Term, then Tenant shall be a tenant at sufferance and, in addition to all other damages and remedies to which Landlord may be entitled for such holding over, (a) Tenant shall pay, in addition to the other Rent, Basic Rent equal to 150% of the Rent payable during the last month of the Term, and (b) Tenant shall otherwise continue to be subject to all of Tenant's obligations under this Lease. The provisions of this Section 22 shall not be deemed to limit or constitute a waiver of any other rights or remedies of Landlord provided herein or at law. If Tenant fails to surrender the Premises upon the termination or expiration of this Lease, in addition to any other liabilities to Landlord accruing therefrom, Tenant shall protect, defend, indemnify and hold Landlord harmless from all loss, costs (including reasonable attorneys' fees) and liability resulting from such failure, including any claims made by any succeeding tenant founded upon such failure to surrender, and any lost profits to Landlord resulting therefrom.
- (b) Notwithstanding Section 22(a) above, provided (1) there is no continuing Event of Default either at the time of election or at the expiration of the Term, (2) Tenant has provided 12 months' prior written notice to Landlord (which notice shall specify the length of the Authorized Holdover Period [defined below], not to exceed 90 days) and (3) Tenant's occupancy during such Authorized Holdover Period shall be subject to all terms and conditions of this Lease, Tenant shall have the option to extend the Term for a period of up to 90 days as specified in the written notice to be delivered to Landlord hereunder (the "**Authorized Holdover Period**"). If Tenant elects to extend the Term for the Authorized Holdover Period, Tenant shall pay monthly Basic Rent for the Authorized Holdover Period in an amount equal to 125% of the Basic Rent payable during the last month of the Term (Additional Rent shall continue in the same manner as provided in this Lease). If Tenant fails to surrender the Premises to Landlord on or before the expiration of the Authorized Holdover Period, in accordance with this Lease, the provisions of Section 22(a) herein shall apply to any such holding over by Tenant with respect to the Premises and Tenant shall not be released from its obligations, covenants and agreements under the Lease related to the Premises during such holdover period.

23. **Certain Rights Reserved by Landlord.** Provided that the exercise of such rights does not unreasonably interfere with Tenant's occupancy of the Premises, Landlord shall have the following rights:

- (a) **Building Operations.** To decorate and to make inspections, repairs, alterations, additions, changes, or improvements, whether structural or otherwise, in and about the Project, or any part thereof; to enter upon the Premises (after giving Tenant reasonable prior notice thereof, which may be oral notice, except in cases of real or apparent emergency, in which case no notice shall be required) and, during the continuance of any such work, to temporarily close doors, entryways, public space, and corridors in the Building; to interrupt or temporarily suspend Building services and facilities; to change the name of the Building; and to change the arrangement and location of entrances or passageways, doors, and doorways, corridors, elevators, stairs, restrooms, or other public parts of the Building;
- (b) **Security.** To take such reasonable measures as Landlord deems advisable for the security of the Building and its occupants; evacuating the Building for cause, suspected cause, or for drill purposes; temporarily denying access to the Building; and closing the Building after normal business hours and on Sundays and holidays, subject, however, to Tenant's right to enter when the Building is closed after normal business hours under such reasonable regulations as Landlord may prescribe from time to time. Without limiting the generality of the immediately preceding sentence, Tenant acknowledges that LANDLORD MAKES NO REPRESENTATION OR WARRANTY REGARDING WHETHER OR NOT LANDLORD WILL PROVIDE SECURITY SERVICES, OR IF SO, WHAT FORM OF SECURITY SERVICES WILL BE PROVIDED;

- (c) **Prospective Purchasers and Lenders.** Upon 24 hours' prior written notice, to enter the Premises at all reasonable hours to show the Premises to prospective purchasers or lenders; and
- (d) **Prospective Tenants.** At any time during the last 12 months of the Term (or earlier if Tenant has notified Landlord in writing that it does not desire to renew the Term) or at any time following the occurrence of an Event of Default, to enter the Premises at all reasonable hours, upon 24 hours' prior written notice, to show the Premises to prospective tenants.

24. **Intentionally Omitted.**

25. **Miscellaneous.**

- (a) **Landlord Transfer.** Landlord may transfer any portion of the Project and any of its rights under this Lease. If Landlord assigns its rights under this Lease, then Landlord shall thereby be released from any further obligations hereunder arising after the date of transfer, provided that the assignee assumes in writing Landlord's obligations hereunder arising from and after the transfer date.
- (b) **Landlord's Liability.** The liability of Landlord (and its partners, shareholders or members) to Tenant (or any person or entity claiming by, through or under Tenant) for any default by Landlord under the terms of this Lease or any matter relating to or arising out of the occupancy or use of the Premises and/or other areas of the Building shall be limited to Tenant's actual direct, but not consequential, damages therefor and shall be recoverable only from the interest of Landlord in the Building and Landlord (and its partners, shareholders or members) shall not be personally liable for any deficiency, except that Landlord shall remain liable to account to Tenant for any security deposit under this Lease, unless and until such deposit is either assigned to a successor landlord hereunder or properly applied to costs and damages in accordance with this Lease. The provisions of this Section shall survive any expiration or termination of this Lease. Additionally, Tenant hereby waives its statutory lien under Section 91.004 of the Texas Property Code.
- (c) **Force Majeure.** Other than for Tenant's obligations under this Lease that can be performed by the payment of money (e.g., payment of Rent and maintenance of insurance), whenever a period of time is herein prescribed for action to be taken by either party hereto, such party shall not be liable or responsible for, and there shall be excluded from the computation of any such period of time, any delays due to strikes, riots, acts of God, shortages of labor or materials, war, terrorist acts or activities, governmental laws, regulations, or restrictions, or any other causes of any kind whatsoever which are beyond the control of such party.
- (d) **Brokerage.** Neither Landlord nor Tenant has dealt with any broker or agent in connection with the negotiation or execution of this Lease, other than Jones Lang LaSalle Brokerage, Inc., Billingsley Property Services, Inc., and Mass Realty LLC, whose commissions shall be paid by Landlord pursuant to separate written agreements. Tenant and Landlord shall each indemnify the other against all costs, expenses, attorneys' fees, liens and other liability for commissions or other compensation claimed by any other broker or agent claiming the same by, through, or under the indemnifying party.
- (e) **Estoppel Certificates.** From time to time, Tenant shall furnish to any party designated by Landlord, within ten days after Landlord has made a request therefor, a certificate signed by Tenant confirming and containing such factual certifications and representations as to this Lease as Landlord may reasonably request. Unless otherwise required by Landlord's Mortgagee or a prospective purchaser or mortgagee of the Project, the initial form of estoppel certificate to be signed by Tenant is attached hereto as Exhibit F. If Tenant does not deliver to Landlord the certificate signed by Tenant within such required time period, Landlord, Landlord's Mortgagee and any prospective purchaser or mortgagee, may conclusively presume and rely upon the following facts: (1) this Lease is in full force and effect; (2) the terms and provisions of this Lease have not been changed except as otherwise represented by Landlord; (3) not more than one monthly installment of Basic Rent and other charges have been paid in advance; (4) there are no claims against Landlord nor any defenses or rights of offset against collection of Rent or other charges; and (5) Landlord is not in default under this Lease. In such event, Tenant shall be estopped from denying the truth of the presumed facts.

- (f) **Notices.** All notices and other communications given pursuant to this Lease shall be in writing and shall be (1) mailed by first class, United States Mail, postage prepaid, certified, with return receipt requested, and addressed to the parties hereto at the address specified in the Basic Lease Information, (2) hand delivered to the intended addressee, (3) sent by a nationally recognized overnight courier service, or (4) sent by facsimile transmission during normal business hours followed by a confirmatory letter sent in another manner permitted hereunder. All notices shall be effective upon delivery to the address of the addressee (even if such addressee refuses delivery thereof). The parties hereto may change their addresses by giving notice thereof to the other in conformity with this provision.
- (g) **Separability.** If any clause or provision of this Lease is illegal, invalid, or unenforceable under present or future laws, then the remainder of this Lease shall not be affected thereby and in lieu of such clause or provision, there shall be added as a part of this Lease a clause or provision as similar in terms to such illegal, invalid, or unenforceable clause or provision as may be possible and be legal, valid, and enforceable.
- (h) **Amendments; Binding Effect; No Electronic Records.** This Lease may not be amended except by instrument in writing signed by Landlord and Tenant. No provision of this Lease shall be deemed to have been waived by Landlord unless such waiver is in writing signed by Landlord, and no custom or practice which may evolve between the parties in the administration of the terms hereof shall waive or diminish the right of Landlord to insist upon the performance by Tenant in strict accordance with the terms hereof. Landlord and Tenant hereby agree not to conduct the transactions or communications contemplated by this Lease by electronic means, except by facsimile transmission as specifically set forth in Section 25(f); nor shall the use of the phrase "in writing" or the word "written" be construed to include electronic communications except by facsimile transmissions as specifically set forth in Section 25(f). The terms and conditions contained in this Lease shall inure to the benefit of and be binding upon the parties hereto, and upon their respective successors in interest and legal representatives, except as otherwise herein expressly provided. This Lease is for the sole benefit of Landlord and Tenant, and, other than Landlord's Mortgagee, no third party shall be deemed a third party beneficiary hereof.
- (i) **Quiet Enjoyment.** Provided Tenant has performed all of its obligations hereunder, Tenant shall peaceably and quietly hold and enjoy the Premises for the Term) without hindrance from Landlord or any party claiming by, through, or under Landlord, but not otherwise, subject to the terms and conditions of this Lease.
- (j) **No Merger.** There shall be no merger of the leasehold estate hereby created with the fee estate in the Premises or any part thereof if the same person acquires or holds, directly or indirectly, this Lease or any interest in this Lease and the fee estate in the leasehold Premises or any interest in such fee estate.
- (k) **No Offer.** The submission of this Lease to Tenant shall not be construed as an offer, and Tenant shall not have any rights under this Lease unless Landlord executes a copy of this Lease and delivers it to Tenant.
- (l) **Entire Agreement.** This Lease constitutes the entire agreement between Landlord and Tenant regarding the subject matter hereof and supersedes all oral statements and prior writings relating thereto. Except for those set forth in this Lease, no representations, warranties, or agreements have been made by Landlord or Tenant to the other with respect to this Lease or the obligations of Landlord or Tenant in connection therewith. The normal rule of construction that any ambiguities be resolved against the drafting party shall not apply to the interpretation of this Lease or any exhibits or amendments hereto.

- (m) **Waiver of Jury Trial; Counterclaims.** TO THE MAXIMUM EXTENT PERMITTED BY LAW, LANDLORD AND TENANT EACH WAIVE ANY RIGHT TO TRIAL BY JURY IN ANY LITIGATION OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE ARISING OUT OF OR WITH RESPECT TO THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HERewith OR THE TRANSACTIONS RELATED HERETO. IT IS FURTHER MUTUALLY AGREED THAT IN THE EVENT LANDLORD COMMENCES ANY PROCEEDING OR ACTION FOR POSSESSION, INCLUDING A SUMMARY PROCEEDING FOR POSSESSION OF THE PREMISES, TENANT WILL NOT INTERPOSE ANY COUNTERCLAIM OF WHATEVER NATURE OR DESCRIPTION IN ANY SUCH PROCEEDING, EXCEPT FOR STATUTORY MANDATORY COUNTERCLAIMS.
- (n) **Governing Law.** This Lease shall be governed by and construed in accordance with the laws of the state in which the Premises are located.
- (o) **Recording.** Tenant shall not record this Lease or any memorandum of this Lease without the prior written consent of Landlord, which consent may be withheld or denied in the sole and absolute discretion of Landlord, and any recordation by Tenant shall be a material breach of this Lease. Tenant grants to Landlord a power of attorney to execute and record a release releasing any such recorded instrument of record that was recorded without the prior written consent of Landlord.
- (p) **Water or Mold Notification.** To the extent Tenant or its agents or employees discover any water leakage, water damage or mold in or about the Premises or Project, Tenant shall promptly notify Landlord thereof in writing.
- (q) **Joint and Several Liability.** If Tenant is comprised of more than one party, each such party shall be jointly and severally liable for Tenant's obligations under this Lease. All unperformed obligations of Tenant hereunder not fully performed at the end of the Term shall survive the end of the Term, including payment obligations with respect to Rent and all obligations concerning the condition and repair of the Premises.
- (r) **Financial Reports.** Within 15 days after Landlord's request, Tenant will furnish Tenant's most recent audited financial statements (including any notes to them) to Landlord, or, if no such audited statements have been prepared, such other financial statements (and notes to them) as may have been prepared by an independent certified public accountant or, failing those, Tenant's internally prepared financial statements. If Tenant is a publicly traded corporation, Tenant may satisfy its obligations hereunder by providing to Landlord Tenant's most recent annual and quarterly reports. Tenant will discuss its financial statements with Landlord and, following the occurrence of an Event of Default hereunder, will give Landlord access to Tenant's books and records in order to enable Landlord to verify the financial statements. Landlord will not disclose any aspect of Tenant's financial statements that Tenant designates to Landlord as confidential except (1) to Landlord's Mortgagee or prospective mortgagees or purchasers of the Building, (2) in litigation between Landlord and Tenant, and/or (3) if required by court order. Tenant shall not be required to deliver the financial statements required under this Section 25(r) more than once in any 12-month period unless requested by Landlord's Mortgagee or a prospective buyer or lender of the Building or an Event of Default occurs.
- (s) **Landlord's Fees.** Whenever Tenant requests Landlord to take any action not required of it hereunder or give any consent required or permitted under this Lease, Tenant will reimburse Landlord for Landlord's reasonable, out-of-pocket costs payable to third parties and incurred by Landlord in reviewing the proposed action or consent, including reasonable attorneys', engineers' or architects' fees, within 30 days after Landlord's delivery to Tenant of a statement of such costs. Tenant will be obligated to make such reimbursement without regard to whether Landlord consents to any such proposed action.
- (t) **Telecommunications.** Tenant and its telecommunications companies, including local exchange telecommunications companies and alternative access vendor services companies, shall have no right of access to and within the Building, for the installation and operation of telecommunications systems, including voice, video, data, Internet, and any other services provided over wire, fiber optic, microwave, wireless, and any other transmission systems ("**Telecommunications Services**"), for part or all of Tenant's telecommunications within the Building and from the Building to any other location without Landlord's prior written consent, not to be unreasonably withheld. All providers of Telecommunications Services shall be required to comply with the rules and regulations of the Building, applicable Laws and Landlord's policies and practices for the Building. Tenant acknowledges that Landlord shall not be required to provide or arrange for any Telecommunications Services and that Landlord shall have no liability to any Tenant Party in connection with the installation, operation or maintenance of Telecommunications Services or any equipment or facilities relating thereto. Tenant, at its cost and for its own account, shall be solely responsible for obtaining all Telecommunications Services.

- (u) **Confidentiality.** Tenant acknowledges that the terms and conditions of this Lease are to remain confidential for Landlord's benefit, and may not be disclosed by Tenant to anyone, by any manner or means, directly or indirectly: without Landlord's prior written consent; however, Tenant may disclose the terms and conditions of this Lease if required by Law or court order, to its attorneys, accountants, employees and existing or prospective financial partners provided same are advised by Tenant of the confidential nature of such terms and conditions and agree to maintain the confidentiality thereof (in each case, prior to disclosure). Tenant shall be liable for any disclosures made in violation of this Section by Tenant or by any entity or individual to whom the terms of and conditions of this Lease were disclosed or made available by Tenant. The consent by Landlord to any disclosures shall not be deemed to be a waiver on the part of Landlord of any prohibition against any future disclosure.
- (v) **Authority.** Tenant (if a corporation, partnership or other business entity) hereby represents and warrants to Landlord that Tenant is a duly formed and existing entity qualified to do business in the state in which the Premises are located, that Tenant has full right and authority to execute and deliver this Lease, and that each person signing on behalf of Tenant is authorized to do so. Landlord hereby represents and warrants to Tenant that Landlord is a duly formed and existing entity qualified to do business in the state in which the Premises are located, that Landlord has full right and authority to execute and deliver this Lease, and that each person signing on behalf of Landlord is authorized to do so.
- (w) **Security Service.** Tenant acknowledges and agrees that, while Landlord may (but shall not be obligated to), patrol the Building, Landlord is not providing any security services with respect to the Premises and that Landlord shall not be liable to Tenant for, and Tenant waives any claim against Landlord with respect to, any loss by theft or any other damage suffered or incurred by Tenant in connection with any unauthorized entry into the Premises or any other breach of security with respect to the Premises.
- (x) **Hazardous Materials.** The term "**Hazardous Materials**" means any substance, material, or waste which is now or hereafter classified or considered to be hazardous, toxic, or dangerous under any Law relating to pollution or the protection or regulation of human health, natural resources or the environment, or poses or threatens to pose a hazard to the health or safety of persons on the Premises or in the Project. Tenant shall not use, generate, store, or dispose of, or permit the use, generation, storage or disposal of Hazardous Materials on or about the Premises or the Project except in a manner and quantity necessary for the ordinary performance of Tenant's business, and then in compliance with all Laws. If Tenant breaches its obligations under this Section 25(x), Landlord may immediately take any and all action reasonably appropriate to remedy the same, including taking all appropriate action to clean up or remediate any contamination resulting from Tenant's use, generation, storage or disposal of Hazardous Materials. Tenant shall defend, indemnify, and hold harmless Landlord and its representatives and agents from and against any and all claims, demands, liabilities, causes of action, suits, judgments, damages and expenses (including reasonable attorneys' fees and cost of clean up and remediation) arising from Tenant's failure to comply with the provisions of this Section 25(x). This indemnity provision shall survive termination or expiration of this Lease.

- (y) **List of Exhibits.** All exhibits and attachments attached hereto are incorporated herein by this reference.

Exhibit A - Outline of Premises
Exhibit B - Description of the Land
Exhibit C - Building Rules and Regulations
Exhibit D - Tenant Finish-Work
Exhibit E - Form of Confirmation of Commencement Date Letter
Exhibit F - Form of Tenant Estoppel Certificate
Exhibit G - Parking
Exhibit H - Renewal Option
Exhibit I - Janitorial Specifications

- (z) **Determination of Charges.** Landlord and Tenant agree that each provision of this Lease for determining charges and amounts payable by Tenant (including provisions regarding Additional Rent and Tenant's Proportionate Share of Electrical Costs) is commercially reasonable and, as to each such charge or amount, constitutes a statement of the amount of the charge or a method by which the charge is to be computed for purposes of Section 93.012 of the Texas Property Code.
- (aa) **Prohibited Persons and Transactions.** Tenant represents and warrants to Landlord that Tenant is currently in compliance with and shall at all times during the Term (including any extension thereof) remain in compliance with the regulations of the OFAC of the Department of the Treasury (including those named on OFAC's Specially Designated Nationals and Blocked Persons List) and any statute, executive order (including the September 24, 2001, Executive Order Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit or Support Terrorism), or other governmental action relating thereto.

26. **Other Provisions.**

- (a) **Security System.** Tenant may, at its sole cost and expense, install an electronic card key system within the Premises. Tenant shall furnish Landlord with a copy of all key codes or access cards and Tenant shall ensure that Landlord shall have access to the Premises at all times. Additionally, Tenant shall ensure that such system shall comply with all Laws, including all fire safety laws, and in no event shall Landlord be liable for, and Tenant shall defend, indemnify, and hold harmless Landlord and its representatives and agents from any claims, demands, liabilities, causes of action, suits, judgments, damages and expenses arising from, such system or the malfunctioning thereof in accordance with Tenant's indemnity contained in Section 11(c) hereof. Sections 8 and 21 of this Lease shall govern the installation, maintenance and Landlord's removal rights with respect to such security system.
- (b) **Suite and Lobby Signage.** Landlord, at its cost and expense, shall provide exterior suite and directory signage to Tenant and Tenant shall not place any additional signage outside the Premises.
- (c) **Environmental Representation by Landlord.** Landlord represents that it has received no written notification revealing the presence of any Hazardous Materials located at the Building in levels that would require remediation.
- (d) **Early Access Right.** Landlord and Tenant acknowledge that for the thirty (30) day period prior to the Commencement Date, Tenant shall have a license to occupy the Premises only for the purpose of installing its racking systems, technology telecommunications set-up, and general "make ready" activities, subject to and in accordance with the terms and provisions of this Lease and this Section 26(d), including the Landlord's right to revoke the license as expressly provided herein, and otherwise only to the extent permissible under all applicable Laws (including, without limitation, any Laws or requirements of any governmental agency requiring a certificate of occupancy prior to the occupancy of the Premises) (the "Early Access Right"). Tenant shall ensure that its employees and contractors do not interfere with Landlord's completion of the Work. Tenant hereby acknowledges and agrees that Tenant assumes all risk associated with its early occupancy of the Premises prior to the Commencement Date and Landlord shall not be liable to Tenant or Tenant's agents, employees, contractors, subcontractors, guests, invitees or any person claiming by, through or under Tenant for any injury to person, loss of or damage to property, or for loss of or damage to Tenant's business by any cause whatsoever, except to the extent arising from or out of Landlord's gross negligence or willful misconduct. In the event Tenant accesses the Premises prior to the

Commencement Date, then until the Commencement Date Tenant shall be subject to all of the terms, obligations and conditions of this Lease (including the requirement to maintain all insurance required under this Lease), except only for the obligations to pay Basic Rent and Additional Rent.

- (e) **Waiver of Consumer Rights.** TENANT HEREBY WAIVES ITS RIGHTS UNDER THE DECEPTIVE TRADE PRACTICES-CONSUMER PROTECTION ACT, SECTION 17.41 ET SEQ., BUSINESS & COMMERCE CODE, A LAW THAT GIVES CONSUMERS SPECIAL RIGHTS AND PROTECTIONS. AFTER CONSULTATION WITH AN ATTORNEY OF TENANT'S OWN SELECTION, TENANT VOLUNTARILY CONSENTS TO THIS WAIVER.

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LANDLORD AND TENANT EXPRESSLY DISCLAIM ANY IMPLIED WARRANTY THAT THE PREMISES ARE SUITABLE FOR TENANT'S INTENDED COMMERCIAL PURPOSE, AND TENANT'S OBLIGATION TO PAY RENT HEREUNDER IS NOT DEPENDENT UPON THE CONDITION OF THE PREMISES OR THE PERFORMANCE BY LANDLORD OF ITS OBLIGATIONS HEREUNDER, AND, EXCEPT AS OTHERWISE EXPRESSLY PROVIDED HEREIN, TENANT SHALL CONTINUE TO PAY THE RENT, WITHOUT ABATEMENT, DEMAND, SETOFF OR DEDUCTION, NOTWITHSTANDING ANY BREACH BY LANDLORD OF ITS DUTIES OR OBLIGATIONS HEREUNDER, WHETHER EXPRESS OR IMPLIED.

This Lease is executed on the respective dates set forth below, but for reference purposes, this Lease shall be dated as of the date first above written. If the execution date is left blank, this Lease shall be deemed executed as of the date first written above.

LANDLORD:

CB OFFICE 10, LTD., a Texas limited partnership

By: CB Office 10 GP, LLC, a Texas limited liability company, its general partner

By: _____

Name:

Title: Senior Vice President

TENANT:

RFM Integrated Device Inc., a corporate company

By: /s/ Yu-Tung, Huang

Name: Yu-Tung, Huang

Title: Chairman

EXHIBIT A
OUTLINE OF PREMISES

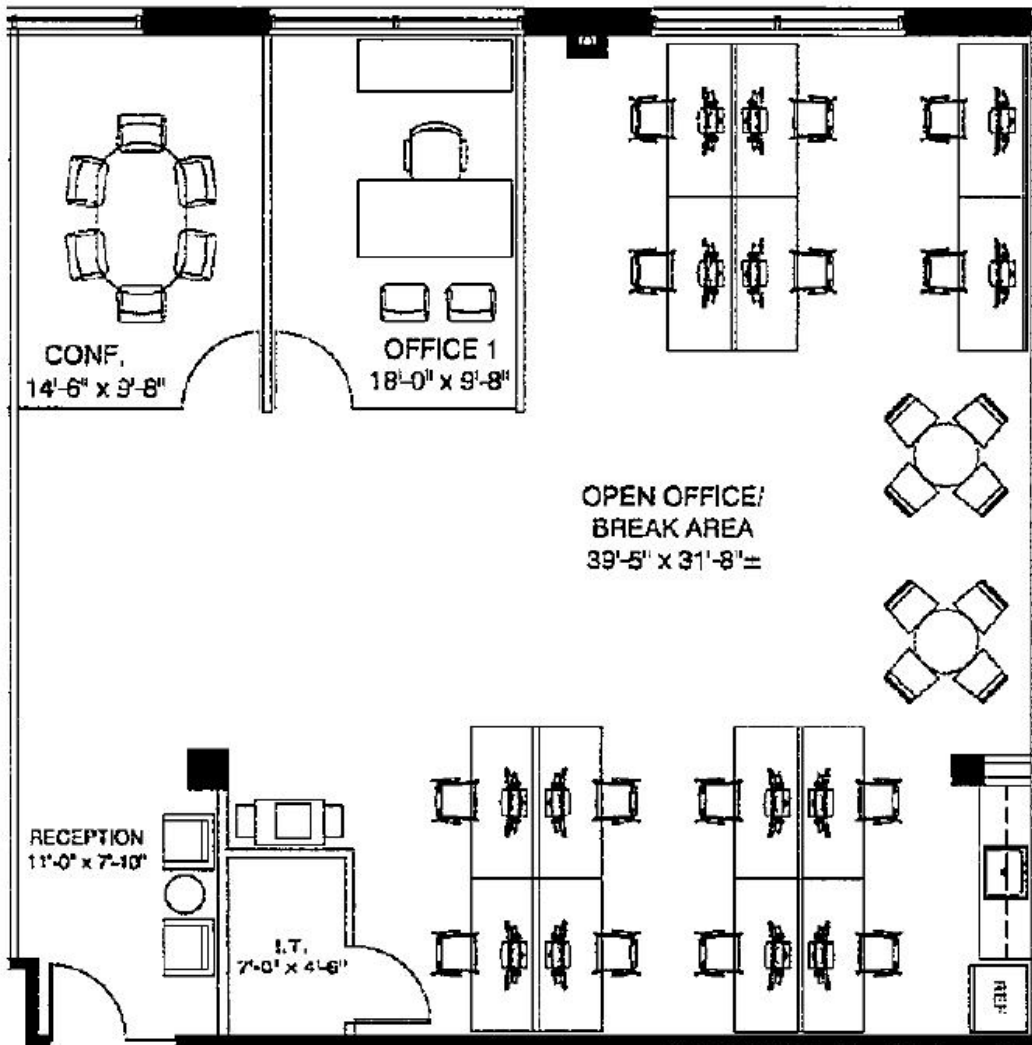


EXHIBIT B

DESCRIPTION OF THE LAND

Being a certain 8.1195 acre tract of land situated in the J.S. Haynes Survey, Abstract No. 457, City of Carrollton, Collin County, Texas, and also being known as Lot 1 Block A of the CROW-BILLINGSLEY HERMES ADDITION as recorded in Cabinet M, Page 363, Land Records of Collin County, Texas, and being more particularly described as follows:

BEGINNING at a 5/8" iron rod found for corner situated in the east line of Midway Road (120' R.O.W.), said iron rod also being the most westerly northwest corner of Lot 1 Block 1 HENRY BUTTS OLDSMOBILE ADDITION as recorded in Cabinet L, Page 997, Land Records of Collin County, Texas;

THENCE N01°38'46"E, along the east line of said Midway Road, a distance of 458.50 feet to a 63/8" iron rod found for a corner; said corner also being the southwest corner of Lot 2 Block A, of said CROW-BILLINGSLEY HERMES ADDITION;

THENCE S88°21'14"E, departing said east line and along the common southerly line of Lot 2 Block A and the northerly line of said Lot 1 Block A of CROW-BILLINGSLEY HERMES ADDITION, a distance of 778.40 to a 5/8" iron rod found for corner, and said iron rod also being a corner in a west line of the aforementioned Lot 1 Block 1 HENRY BUTTS OLDSMOBILE ADDITION;

THENCE S01°38'46"W, along the common west line of said Lot 1 Block 1 HENRY BUTTS OLDSMOBILE ADDITION and said east line of Lot 1 Block A, a distance of 450.26 feet to a 3/8" iron rod found for a corner; and said iron rod also being a corner in the west line of the Lot 1 Block 1 HENRY BUTTS OLDSMOBILE ADDITION;

THENCE N68°57'39"W, departing said common west line and along the common most southerly north line of said Lot 1 Block 1 HENRY BUTTS OLDSMOBILE ADDITION and the south line of the said Lot 1 Block A, a distance of 778.44 feet to the POINT OF BEGINNING and containing 353,687 square feet or 8.1195 acres of land.

EXHIBIT C

BUILDING RULES AND REGULATIONS

The following rules and regulations shall apply to the Premises, the Building, the parking garage associated therewith, and the appurtenances thereto:

1. Sidewalks, doorways, vestibules, halls, stairways, and other similar areas shall not be obstructed by tenants or used by any tenant for purposes other than ingress and egress to and from their respective leased premises and for going from one to another part of the Building.
2. Plumbing, fixtures and appliances shall be used only for the purposes for which designed, and no sweepings, rubbish, rags or other unsuitable material shall be thrown or deposited therein. Damage resulting to any such fixtures or appliances from misuse by a tenant or its agents, employees or invitees, shall be paid by such tenant.
3. No signs, advertisements or notices shall be painted or affixed on or to any windows or doors or other part of the Building without the prior written consent of Landlord. No nails, hooks or screws (other than those which are necessary to hang paintings, prints, pictures, or other similar items on the Premises' interior walls) shall be driven or inserted in any part of the Building except by Building maintenance personnel. No curtains or other window treatments shall be placed between the glass and any Building standard window treatments.
4. Landlord shall provide and maintain an alphabetical directory for all tenants in the main lobby of the Building.
5. Landlord shall provide all door locks in each tenant's leased premises, at the cost of such tenant, and no tenant shall place any additional door locks in its leased premises without Landlord's prior written consent. Landlord shall furnish to each tenant three keys to such tenant's leased premises free of charge, with additional keys provided at such tenants cost. No tenant shall make a duplicate thereof. Security Building access cards shall be provided by Landlord to tenants at no charge for up to ten cards; additional cards thereafter are provided at a cost of \$10.00 per card.
6. No tenant shall place any additional signage outside their premises.
7. Movement in or out of the Building of furniture, office equipment, bulky material, merchandise or materials shall be conducted Monday through Friday before 8:00 a.m. or after 5:00 p.m. All movement activity whether it be Monday through Friday, weekend or holiday, should be scheduled through the Landlord 48 hours prior to such movement. Tenant assumes all risks and shall be liable for all damage to articles moved and injury to persons or public engaged or not engaged in such movement, including equipment, property and personnel of Landlord if damaged or injured as a result of acts in connection with carrying out this service for such tenant.
8. All damage to the Building caused by the installation, placement, or removal of any property of a tenant, or done by a tenant's property while in the Building, shall be repaired at the expense of such tenant. No tenant shall be liable for any damage resulting solely from the weight of any items placed in the Building by such tenant provided such items do not, in the aggregate, exceed the building weight loads specified by Landlord.
9. Corridor doors, when not in use, shall be kept closed. Nothing shall be swept or thrown into the corridors, halls, elevator shafts or stairways. No birds or animals other than animals assisting the disabled shall be brought into or kept in, on or about any tenant's leased premises. No portion of any tenant's leased premises shall at any time be used or occupied as sleeping or lodging quarters.
10. Tenant shall cooperate with Landlord's employees in keeping the Building and its leased premises neat and clean.
11. Tenants shall not employ any person for the purpose of such cleaning other than the Building's cleaning and maintenance personnel.
12. Tenant shall not make or permit any improper, objectionable or unpleasant noises or odors in the Building or otherwise interfere in any way with other tenants or persons having business with them.
13. No machinery of any kind other than normal office and laboratory equipment (that does not use flame or otherwise pose a heightened risk of damage to the Premises) shall be operated by any tenant on its leased area without Landlord's prior written consent, nor shall any tenant use or keep in the Building any flammable or explosive fluid or substance not approved in writing in advance by Landlord.

14. Landlord will not be responsible for lost or stolen personal property, money or jewelry from tenant's leased premises or public or common areas regardless of whether such loss occurs when the area is locked against entry or not.
15. In the event any vending machines are maintained in the Building for common use by all tenants, no vending or dispensing machines of any kind may be maintained in any leased premises without the prior written permission of Landlord, which consent shall not be unreasonably delayed, withheld or conditioned. Any vending machines contained in any leased premises shall be for the sole use of the applicable tenant, its employees and guests.
16. All mail chutes located in the Building shall be available for use by Landlord and all tenants of the Building according to the rules of the United States Postal Service.
17. No smoking of any type is permitted in any portion of the Building, including any portion thereof leased by tenants. Landlord shall designate smoking areas outside of the Building.
18. No firearms or weapons of any type are permitted upon the Land or within the Project.
19. While at the Project, Tenant, its employees, agents and guests shall behave in a manner consistent with that expected in a Class A office building located in North Dallas.
20. Tenant shall notify Landlord before holding an event in a common area of the Project or serving alcohol.
21. In order to maintain and operate the parking areas in an orderly manner, Landlord reserves the right to establish any reasonable system of parking monitoring, including the issuance of vehicle identification stickers (including not less than two (2) such stickers per each employee of Tenant), and all persons parking in the parking areas shall comply with such system. Except with respect to any reserved spaces to which Tenant may be entitled pursuant to the Lease. Tenant and Tenant's employees shall park their cars only in those portions of the parking areas that are from time to time designated for that purpose by Landlord. Landlord shall have the right from time to time to relocate parking areas within the Project for use by Tenant. Tenant shall furnish in writing the make, model, color and state automobile license number (automobile license numbers to be submitted on a yearly basis) assigned to Tenant's cars within thirty (30) days after taking possession of the Premises and shall thereafter notify Landlord in writing of any changes within five (5) days. In the event Tenant or its employees, agents or licensees fail to park their cars in the parking areas so designated from time to time by Landlord, then any requirements in the Lease regarding prior notice to Tenant or the expiration of any grace period, or both, shall not apply and Landlord at its option shall have the following right and option, but only after first placing one prior written notice of violation on vehicles that are parked in violation of these parking rules and regulations, to tow such vehicles away each at the vehicle owner's cost and expense. Parking areas shall be used only for parking vehicles no longer than full-size passenger vehicles. The maintenance, washing, waxing or cleaning of vehicles in the parking structure or elsewhere in the Project is prohibited. Such parking use as is herein provided is intended merely as a license only and no bailment is intended or shall be created hereby.
22. No tenant shall be permitted to tow or remove any vehicle.
23. Tenant shall provide Landlord 48-hour notice if it intends to operate any form of shuttle or bus service (whether on a recurring basis or for a one-time special event).
25. In order to maintain and operate the parking areas in an orderly manner and provide for the safety of the tenants, Landlord reserves the right to designate drop-off and pick-up locations and traffic flow patterns for any such shuttle or bus service.

EXHIBIT D

**TENANT FINISH-WORK: WORK OF LIMITED SCOPE (NO PLANS)
(Landlord Performs the Work)**

1. **Acceptance of Premises.** Except as set forth in Section 2 of this Exhibit, Tenant accepts the Premises in their "**AS-IS**" condition, and, except as expressly set forth below, Landlord shall have no obligation to perform any work therein (including demolition of any improvements existing therein or construction of any tenant finish-work or other improvements therein), and shall not be obligated to reimburse Tenant or provide an allowance for any costs related to the demolition or construction of improvements therein. Before Tenant may occupy the Premises to conduct its business therein, Tenant shall, at its expense, obtain and deliver to Landlord a certificate of occupancy from the appropriate governmental authority for the Premises.

2. **Scope of Work.** Landlord shall install an exhaust fan and two additional electrical outlets in the Premises (the "**Work**"). The Work shall be performed by Landlord using Building-standard materials in Building-standard quantities

EXHIBIT E

CONFIRMATION OF COMMENCEMENT DATE

_____, 20__

Re: Lease Agreement (the "**Lease**") dated _____, 201__, between _____, a _____ ("**Landlord**"), and _____, a _____ ("**Tenant**"). Capitalized terms used herein but not defined shall be given the meanings assigned to them in the Lease.

Ladies and Gentlemen:

Landlord and Tenant agree as follows:

1. **Condition of Premises.** Tenant has accepted possession of the Premises pursuant to the Lease. Any improvements required by the terms of the Lease to be made by Landlord have been completed to the full and complete satisfaction of Tenant in all respects except for the punchlist items described on Exhibit A hereto (the "Punchlist Items"), and except for such Punchlist Items, Landlord has fulfilled all of its duties under the Lease with respect to such initial tenant improvements. Furthermore, Tenant acknowledges that the Premises are suitable for the Permitted Use.
2. **Commencement Date.** The Commencement Date of the Lease is _____, 20__.
3. **Expiration Date.** The Term is scheduled to expire on the last day of the __th full calendar month of the Term, which date is _____, 20__.
4. **Contact Person.** Tenant's contact person in the Premises is:

Attention: _____
Telephone: ___-___-_____
Telecopy: ___-___-_____

5. **Ratification.** Tenant hereby ratifies and confirms its obligations under the Lease, and represents and warrants to Landlord that it has no defenses thereto. Additionally, Tenant further confirms and ratifies that, as of the date hereof, (a) the Lease is and remains in good standing and in full force and effect, and (b) Tenant has no claims, counterclaims, set-offs or defenses against Landlord arising out of the Lease or in any way relating thereto or arising out of any other transaction between Landlord and Tenant.
6. **Binding Effect; Governing Law.** Except as modified hereby, the Lease shall remain in full effect and this letter shall be binding upon Landlord and Tenant and their respective successors and assigns. If any inconsistency exists or arises between the terms of this letter and the terms of the Lease, the terms of this letter shall prevail. This letter shall be governed by the laws of the state in which the Premises are located.

Please indicate your agreement to the above matters by signing this letter in the space indicated below and returning an executed original to us.

Sincerely,
_____, a _____

By: _____
Name: _____
Title: _____

Agreed and accepted:

[TENANT'S SIGNATURE BLOCK], a _____

By: _____
Name: _____
Title: _____

EXHIBIT A

PUNCHLIST ITEMS

Please insert any punchlist items that remain to be performed by Landlord. If no items are listed below by Tenant, none shall be deemed to exist.

EXHIBIT F

FORM OF TENANT ESTOPPEL CERTIFICATE

The undersigned is the Tenant under the Lease (defined below) between _____, a _____, as Landlord, and the undersigned as Tenant, for the Premises on the _____ floor(s) of the office building located at _____, _____ and commonly known as _____, and hereby certifies as follows:

1. The Lease consists of the original Lease Agreement dated as of _____, 201__ between Tenant and Landlord/*[s predecessor-in-interest]* and the following amendments _____ or modifications _____ thereto _____ (if _____ none, _____ please _____ state "none"); _____

2. The documents listed above are herein collectively referred to as the "Lease" and represent the entire agreement between the parties with respect to the Premises. All capitalized terms used herein but not defined shall be given the meaning assigned to them in the Lease.

3. The Lease is in full force and effect and has not been modified, supplemented or amended in any way except as provided in Section 1 above.

4. The Term commenced on _____, 201__ and the Term expires, excluding any renewal options, on _____, 201__, and Tenant has no option to purchase all or any part of the Premises or the Building or, except as expressly set forth in the Lease, any option to terminate or cancel the Lease.

5. Tenant currently occupies the Premises described in the Lease and Tenant has not transferred, assigned, or sublet any portion of the Premises nor entered into any license or concession agreements with respect thereto except as follows (if none, please state "none"): _____

6. All monthly installments of Basic Rent, all Additional Rent and all monthly installments of estimated Additional Rent have been paid when due through _____. The current monthly installment of Basic Rent is \$_____.

7. All conditions of the Lease to be performed by Landlord necessary to the enforceability of the Lease have been satisfied and Landlord is not in default thereunder. In addition, Tenant has not delivered any notice to Landlord regarding a default by Landlord thereunder.

8. As of the date hereof, there are no existing defenses or offsets, or, to the undersigned's knowledge, claims or any basis for a claim, that the undersigned has against Landlord and no event has occurred and no condition exists, which, with the giving of notice or the passage of time, or both, will constitute a default under the Lease.

9. No rental has been paid more than 30 days in advance and no security deposit has been delivered to Landlord except as provided in the Lease.

10. If Tenant is a corporation, partnership or other business entity, each individual executing this Estoppel Certificate on behalf of Tenant hereby represents and warrants that Tenant is a duly formed and existing entity qualified to do business in the state in which the Premises are located and that Tenant has full right and authority to execute and deliver this Estoppel Certificate and that each person signing on behalf of Tenant is authorized to do so.

11. There are no actions pending against Tenant under any bankruptcy or similar laws of the United States or any state.

12. Other than in compliance with all applicable laws and incidental to the ordinary course of the use of the Premises, the undersigned has not used or stored any hazardous substances in the Premises.

13. Tenant is not itself, and is not directly or indirectly owned, controlled or supported by, a "Specially Designated National" or otherwise designated as a blocked person under any regulation of the Office of Foreign Assets Control, U.S. Department of Treasury (see: www.ustreas.gov/offices/enforcement/OFAC).

14. All tenant improvement work to be performed by Landlord under the Lease has been completed in accordance with the Lease and has been accepted by the undersigned and all reimbursements and allowances due to the undersigned under the Lease in connection with any tenant improvement work have been paid in full.

Tenant acknowledges that this Estoppel Certificate may be delivered to Landlord, Landlord's Mortgagee or to a prospective mortgagee or prospective purchaser, and their respective successors and assigns, and acknowledges that Landlord, Landlord's Mortgagee and/or such prospective mortgagee or prospective purchaser will be relying upon the statements contained herein in disbursing loan advances or making a new loan or acquiring the property of which the Premises are a part and that receipt by it of this certificate is a condition of disbursing loan advances or making such loan or acquiring such property.

Executed as of _____, 20__.

TENANT:

_____, a

By: _____
Name: _____
Title: _____

EXHIBIT G

PARKING

Tenant may use up to four parking spaces per 1,000 rentable square feet in the Premises (initially, seven parking spaces) in the parking facilities associated with the Building (the "**Parking Area**") subject to such terms, conditions and regulations as are from time to time applicable to patrons of the Parking Area at no additional charge during the initial Term.

Tenant shall at all times comply with all Laws respecting the use of the Parking Area. Landlord reserves the right to adopt, modify, and enforce reasonable rules and regulations governing the use of the Parking Area from time to time including any key-card, sticker, or other identification or entrance systems and hours of operations. Landlord may refuse to permit any person who violates such rules and regulations to park in the Parking Area, and any violation of the rules and regulations shall subject the car to removal from the Parking Area.

Tenant may validate visitor parking by such method or methods as Landlord may approve, at the validation rate from time to time generally applicable to visitor parking. Unless specified to the contrary above, the parking spaces provided hereunder shall be provided on an unreserved, "first-come, first served" basis. Tenant acknowledges that Landlord has arranged or may arrange for the Parking Area to be operated by an independent contractor, not affiliated with Landlord.

There will be a replacement charge payable by Tenant equal to the amount posted from time to time by Landlord for loss of any magnetic parking card or parking sticker issued by Landlord.

All motor vehicles (including all contents thereof) shall be parked in the Parking Area at the sole risk of Tenant and each other Tenant Party, it being expressly agreed and understood Landlord has no duty to insure any of said motor vehicles (including the contents thereof), and Landlord is not responsible for the protection and security of such vehicles. **NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS LEASE, LANDLORD SHALL HAVE NO LIABILITY WHATSOEVER FOR ANY PROPERTY DAMAGE WHICH MIGHT OCCUR ON THE PARKING AREA OR AS A RESULT OF OR IN CONNECTION WITH THE PARKING OF MOTOR VEHICLES IN ANY OF THE PARKING SPACES.**

EXHIBIT H

RENEWAL OPTION

Provided no Event of Default exists at the time of such election, Tenant may renew this Lease as to the entire Premises for one additional period of three years by delivering written notice of the exercise thereof to Landlord not earlier than nine months nor later than six months before the expiration of the Term. The Basic Rent payable for each month during such extended Term shall be the prevailing rental rate (the "**Prevailing Rental Rate**"), at the commencement of such extended Term, for new leases or renewals of comparable space (equivalent in quality, size, utility and location) in comparable office buildings in Plano, Texas, taking into account any tenant improvement allowances, brokerage commissions, rent abatements, parking and other concessions being offered, with the length of the extended Term and the credit standing of Tenant to be taken into account. Within 30 days after receipt of Tenant's notice to renew, Landlord shall deliver to Tenant written notice of the Prevailing Rental Rate and shall advise Tenant of the required adjustment to Basic Rent, if any, and the other terms and conditions offered. Tenant shall, within ten days after receipt of Landlord's notice, notify Landlord in writing whether Tenant accepts or rejects Landlord's determination of the Prevailing Rental Rate. If Tenant timely notifies Landlord that Tenant accepts Landlord's determination of the Prevailing Rental Rate, then, on or before the commencement date of the extended Term, Landlord and Tenant shall execute an amendment to this Lease extending the Term on the same terms provided in this Lease, except as follows:

- (a) Basic Rent shall be adjusted to the Prevailing Rental Rate;
- (b) Tenant shall have no further renewal option except as expressly granted by Landlord in writing; and
- (c) Landlord shall lease to Tenant the Premises in their then-current condition.

If Tenant rejects Landlord's determination of the Prevailing Rental Rate, and timely notifies Landlord thereof, Tenant may, in its notice to Landlord, require that the determination of the Prevailing Rental Rate be made by brokers (and if Tenant makes such election, Tenant shall be deemed to have irrevocably renewed the Term, subject only to the determination of the Prevailing Rental Rate as provided below). In such event, within ten days thereafter, each party shall select a qualified commercial real estate broker with at least ten years' experience in leasing property and buildings in the city or submarket in which the Premises are located. The two brokers shall give their opinion of prevailing rental rates within 20 days after their retention. In the event the opinions of the two brokers differ and, after good faith efforts over the succeeding 20-day period, they cannot mutually agree, the brokers shall immediately and jointly appoint a third broker with the qualifications specified above. This third broker shall immediately (within five days) choose either the determination of Landlord's broker or Tenant's broker and such choice of this third broker shall be final and binding on Landlord and Tenant. Each party shall pay its own costs for its real estate broker. Following the determination of the Prevailing Rental Rate by the brokers, the parties shall equally share the costs of any third broker. The parties shall immediately execute an amendment as set forth above. If Tenant fails to timely notify Landlord in writing that Tenant accepts or rejects Landlord's determination of the Prevailing Rental Rate, time being of the essence with respect thereto, Tenant's rights under this Exhibit shall terminate and Tenant shall have no right to renew this Lease.

Tenant's rights under this Exhibit shall terminate if (1) this Lease or Tenant's right to possession of the Premises is terminated, (2) Tenant assigns any of its interest in this Lease (excluding Permitted Transfers), or (3) Tenant fails to timely exercise its option under this Exhibit, time being of the essence with respect to Tenant's exercise thereof.

EXHIBIT I

JANITORIAL SPECIFICATIONS

I. JANITORIAL SERVICE SPECIFICATIONS FOR TENANT SUITES, COMMON AREAS ON TENANT-OCCUPIED FLOORS AND TENANT COMPUTER ROOMS.

Services listed below shall be provided in a manner that is consistent with the operation of comparable buildings in the vicinity of the Building.

A. Nightly Services

- i. All surface areas, desks, file cabinets, counter tops, book shelves, credenzas, computer screens and other equipment will be dusted. Desk tops will be wiped down but no papers will be moved.
- ii. All glass top desks, glass doors, partitions, light switches and walls will be spot cleaned to remove smudges and fingerprints.
- iii. All carpeted areas will be vacuumed. All hard surface floors will be swept with a dust mop then damp mopped.
- iv. All trash receptacles and ash urns (exterior) will be emptied and cleaned. Liners will be changed whenever necessary. Trash will be taken to the designated areas for trash removal.
- v. All stairwells will be vacuumed and swept as well as dusted.
- vi. The elevator will be vacuumed and fingerprints removed from wall surfaces.
- vii. All kitchen countertops, tables and cupboard doors in break rooms will be cleaned and disinfected. Hand prints and smudges will be removed from the exterior of the refrigerator as well as any other appliances. Microwaves will be cleaned inside and out. Sinks and other chrome areas will be cleaned and polished.
- viii. All fixtures and appliances in the restrooms will be cleaned and sanitized. All chrome and mirrors will be cleaned and polished.
- ix. All commodes and urinals will be cleaned with a germicidal disinfectant. The use of an emulsion bowl cleaner will be used whenever necessary.
- x. Restroom floors will be cleaned using a germicidal disinfectant.

B. Weekly Services

- i. All pictures and door frames will be dusted.
- ii. Partitions and walls in the restrooms will be completely wiped down with a germicidal disinfectant, unless needed more frequently (in which event, any costs associated with such additional service shall be at Tenant's sole cost and expense).
- iii. All VCT floors will be buffed and carpets will be spot cleaned where needed.

C. Monthly Services

- i. All mini-blinds and A/C vents will be dusted.
- ii. Sanitize all telephones.
- iii. Clean entire interior glass partitions and doors.
- iv. All VCT floors will be waxed (more often as necessary) and baseboards polished.

D. Annual/Biannual Services

- i. The interior of all exterior windows will be cleaned at least once per year, and the exterior of all exterior windows will be cleaned at least twice per year.

SUBSIDIARIES OF AKOUSTIS TECHNOLOGIES, INC.

Akoustis, Inc., a Delaware corporation

RFM Integrated Device Inc., a Texas corporation

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statement of Akoustis Technologies, Inc. on Form S-3 (File Nos. 333-262540, 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 September 12, 2022, with respect to our audits of the consolidated financial statements of Akoustis Technologies, Inc. as of June 30, 2022 and 2021 and for each of the two years in the period ended June 30, 2022, which report is included in this Annual Report on Form 10-K of Akoustis Technologies, Inc. for the year ended June 30, 2022.

/s/ Marcum LLP

Marcum LLP
New York, NY
September 12, 2022

**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: September 12, 2022

/s/ Jeffrey B. Shealy

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

**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: September 12, 2022

/s/ Kenneth E. Boller

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

**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, 2022, 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: September 12, 2022

/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.

**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, 2022, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Kenneth E. Boller, 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: September 12, 2022

/s/ Kenneth E. Boller

Kenneth E. Boller
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.