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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2023

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 001-37851

AIRGAIN, INC.
(Exact name of Registrant as specified in its Charter)

Delaware	**95-4523882**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
3611 Valley Centre Drive, Suite 150 San Diego, CA	**92130**
(Address of principal executive offices)	(Zip Code)

(760) 579-0200 (Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.0001 per share	AIRG	The Nasdaq Capital Market

Securities registered pursuant to Section 12(g) of the Act: **None**

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

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

Indicate by check mark whether the Registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
Emerging growth company	☐		

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

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

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

As of June 30, 2023 (the last business day of the Registrant's most recently completed second fiscal quarter), the aggregate market value of the Registrant's common stock held by non-affiliates of the Registrant was approximately $56.2 million, based on the closing price of the Registrant's common stock on The Nasdaq Capital Market of $5.40 per share.

The number of shares of Registrant's common stock ($0.0001 par value) outstanding as of February 27, 2024, was 10,504,597.

DOCUMENTS INCORPORATED BY REFERENCE

Certain sections of the Registrant's definitive proxy statement for the 2023 annual meeting of stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after end of the fiscal year covered by this Form 10-K are incorporated by reference into Part III of this Form 10-K.

AIRGAIN, INC.
TABLE OF CONTENTS
FORM 10-K
For the Year Ended December 31, 2023

PART I
FORWARD-LOOKING STATEMENTS AND MARKET DATA

This annual report on Form 10-K contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (Exchange Act). All statements other than statements of historical fact contained in this annual report, including statements regarding our future operating results, financial position and cash flows, our business strategy and plans, and our objectives for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. This annual report on Form 10-K also contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “would,” “could,” “should,” “expect,” “plan,” “anticipate,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this annual report are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, operating results, business strategy, short-term and long-term business operations and objectives. These forward-looking statements speak only as of the date of this annual report and are subject to a number of risks, uncertainties and assumptions, including those described in Part I, Item 1A, “Risk Factors.” The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. All forward-looking statements are qualified in their entirety by this cautionary statement, which is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

Airgain, the Airgain logo, and other trademarks or service marks of Airgain appearing in this annual report are the property of Airgain, Inc. This annual report also includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, trademarks and tradenames referred to in this annual report appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these trademarks and tradenames.

References to “Airgain, Inc.,” “Airgain,” the “Company,” “we,” “our” and “us” include Airgain, Inc. and our wholly-owned subsidiary.

ITEM 1. BUSINESS

Overview

Airgain is a premier provider of wireless connectivity solutions, offering a range of embedded components, external antennas, and integrated systems worldwide. We streamline wireless connectivity across devices and markets, with a focus on solving complex connectivity challenges, expediting time to market, and optimizing wireless signals. Our mission is to connect the world through optimized, integrated wireless solutions. Our product portfolio focuses on three key markets: enterprise, consumer, and automotive.

Our current enterprise products include embedded cellular modems, antennas for access points and Internet of Things (IoT) applications, and asset trackers. We expect to expand our product offering with fixed wireless access solutions and Smart Network Controlled Cellular Repeaters (Smart NCRs). Our consumer products include embedded antennas for consumer access points, wireless gateways, smart home devices and fixed wireless access devices. Our current automotive products include aftermarket antennas that are typically connected to third-party cellular and Wi-Fi-enabled routers, digital video evidence devices, and telematics gateways. We also recently launched a second generation AirgainConnect® Fleet system solution – a low profile, roof-mounted 5G vehicle gateway, combining a cellular modem, antennas, and additional features into a single device.

We have a rich history of providing radio frequency (RF) expertise, services, and solutions to mobile operators and major original equipment manufacturers (OEMs). With the addition of NimbeLink products in 2021, we expanded our capabilities to include embedded cellular modems, asset trackers and custom IoT systems. We are leveraging our RF and systems experience, and our Mobile Network Operator (MNO) and Multiple Service Operator (MSO) relationships to deliver new and differentiated products.

In 2022, we transitioned to an outsource manufacturing model for our products while maintaining oversight for quality, test, and delivery timeline. We also maintain an intellectual property strategy that includes patent and trademark filings in multiple jurisdictions. As of December 31, 2023, we had over 280 issued and pending patents worldwide.

Products and Solutions

Enterprise

The enterprise market requires reliable wireless access across various settings, including smart cities, utilities, factories, buildings, campuses, transportation hubs, stadiums, and suburban developments.

Our NimbeLink embedded modems serve numerous enterprise sectors requiring cellular connectivity such as packaging, logistics, EV charging, smart cities, smart buildings, agriculture, and asset tracking. These NimbeLink cellular modems, which are both patented and end-device certified, minimize the need for additional carrier certifications. Our customers benefit from these end-device certified modems with lower development costs and faster time to market. Offering a wide array of LTE solutions and products with integrated GPS/GNSS radios, our NimbeLink modems are pin-compatible, facilitating seamless integration and simplifying technology transitions. We also offer embedded modems with optional recurring subscription-based cellular data plans. Our embedded modems are shipping to distribution partners and directly to OEMs.

Our asset trackers are deployed across transportation, supply chain, cold chain, and other specialized applications. Our asset tracking solution utilizes a cellular backbone with Wi-Fi and GPS triangulation, along with various sensors like temperature, motion, distance, tilt, and humidity to monitor asset location and condition in various environments. In addition to hardware, our asset tracking offering includes a recurring revenue component, our subscription-based NLink cloud-based device enablement platform, which allows for deployment and integration with enterprise systems via open APIs. We also offer subscription-based dashboards for viewing asset tracker information, should a customer desire a full solution. Recurring revenue for asset trackers also includes optional cellular data plans. Our asset tracker solutions are primarily shipping to OEMs.

Our custom products feature joint engineering collaboration with strategic customers to develop industrial IoT products (IIoT) for specific applications while helping them reduce their time to market. For example, one of our joint engineering collaboration is with a large IoT customer for a small-size and purpose-built ethernet to cellular router with custom software. Another example of our custom products is a rugged cellular modem purpose-built for outdoor ATV (all-terrain vehicle), motorcycle, and off-roading applications. These examples highlight our dedication to partnerships and delivering high quality, fast time-to-market, and purpose-built custom products. We will continue to invest in strategic custom opportunities as they arise.

Our enterprise IoT and machine-to-machine (M2M) antennas are extensively deployed in diverse systems, devices, and applications, including access points, gateways, fixed wireless access devices and utility meters. Our antenna systems are shipping to major enterprise OEMs and distribution partners.

In 2023, we unveiled a new line of Fixed Wireless Access products designed to address 5G connectivity challenges, reduce deployment costs and enhance customer experiences. In 2023, we also announced our Lighthouse™ smart repeaters platform designed to reduce an operator's capital expenses for extending range, while enhancing 5G coverage. Our outdoor 5G Lantern™ Fixed Wireless Access (FWA) device has integrated high-performance directional antennas, a 5G NR Sub-6 modem, and is powered through a 2.5 gigabit ethernet PoE (power over ethernet) connection. The Lantern 5G FWA has been ruggedized for outdoor use, includes remote management capabilities, and a Wi-Fi based easy installation web interface to help simplify the user experience. We expect Lantern to receive certification at select MNOs, and begin shipping in the first half of 2024. Our Lighthouse smart repeater platform includes both a low-power small office and home office (SOHO) device targeting customers that need additional coverage in small areas, as well as a high-power outdoor network repeater for MNOs and systems integrators. Lighthouse smart repeaters include advanced carrier aggregation (CA), low latency, software upgradeability to support network-controlled repeater (NCR) standards, optional smart antenna technology to assist with installation and maintenance, and an optional remote management system. The smart network repeater also integrates advanced automatic gain control and echo cancellation enabling single-pole installation. Lighthouse is in MNO field trials around the world.

Consumer

The consumer market represents a vast audience utilizing wireless-enabled devices. Our embedded antennas are deployed in various consumer applications including access points, wireless gateways, FWA devices, Wi-Fi routers and extenders, smart TVs, smart home devices, and set-top boxes. These consumer products support a variety of technologies, products and services, including LTE, 5G, Wi-Fi, Bluetooth, LPWAN and GNSS (Global Navigation Satellite System).

We collaborate closely with chipset providers, carriers, original design manufacturers (ODMs), and OEMs to develop highly integrated and tailored embedded antenna solutions. Our relationships with MSOs, ODMs and OEMs are strengthened by our comprehensive and repeatable Over-the-Air test capabilities for Wi-Fi, LTE, 5G, LPWAN, and Bluetooth. Service providers are increasingly transitioning to gigabit Wi-Fi, up to and including Wi-Fi 7. We have invested in next-generation Wi-Fi 7 design and testing capabilities. We expect the combination of Wi-Fi 7 and 5G will be a growth driver for our solutions as the number of antennas per device increases.

We announced in November 2023 that Airgain was selected by a major Tier 1 MNO in North America to supply its next generation antennas for its indoor FWA devices. This selection comes amid ongoing consumer shifts away from traditional wired broadband to wireless as more major telecom providers offer broadband internet access as part of their bundled offerings. We continue to grow our relationships with MSOs and MNOs as the market evolves with both wired and wireless broadband internet offerings.

Automotive

In the automotive market, our products are deployed in a wide range of vehicles in the fleet and aftermarket applications, supporting a variety of technologies that include Wi-Fi, LTE, 5G, LPWAN, GNSS, and Bluetooth. Fleet and aftermarket products in the automotive market typically consist of applications where vehicular wireless routers are paired with external antenna systems to provide connectivity to mobile assets. Within this market, there has been increasing demand for constant connectivity, specifically in the first responder, utility, agriculture, and service fleet markets.

We offer a full line of external fleet antennas that are designed to be rugged, reliable, and flexible to meet almost any need. We design our products for performance, quality, and long product life and our antennas connect to almost any vehicular router or modem. These antennas include high-performance and low-profile versions that mount on the roof, trunk, windshield, or dashboard and are optimized for 5G, 4G, Wi-Fi, and GNSS. Fleet antennas have a five-year limited warranty, which is the longest in the industry, and we offer up to IP67 and IP69K ratings for extended use in the harshest of environments. The deployment of EZConnect cable harnesses in 2023 offers flexible cable lengths and connector types that simplify ordering, inventory management, and installation.

In 2020, we introduced the AC-HPUE product, the first antenna-modem from our AirgainConnect platform. The AC-HPUE integrated a high-power LTE modem with high gain antennas in one enclosure to reduce signal loss and support transmission of the maximum allowable Power Class 1 radiated power. In January 2024 we launched our next-generation product named AirgainConnect Fleet (AC-Fleet). The AC-Fleet solution is 5G and carrier agnostic allowing for a significantly larger target market compared to the AC-HPUE solution. AC-Fleet is one of the first low profile, roof-mounted 5G vehicle gateway, combining the latest 5G NR (New Radio) modem and a Wi-Fi 6 router all in one covert form factor. At only two inches tall, AC-Fleet provides flexibility across multiple markets including public safety, transportation, transit, public and private fleets, and vehicles. We expect our AC-Fleet platform to include hardware and a recurring revenue component including an optional annual subscription for remote access, cloud management, technical support, software updates, and extended warranty. We expect AC-Fleet to receive certification at select MNOs, and begin shipping in the second half of 2024.

Growth Strategy

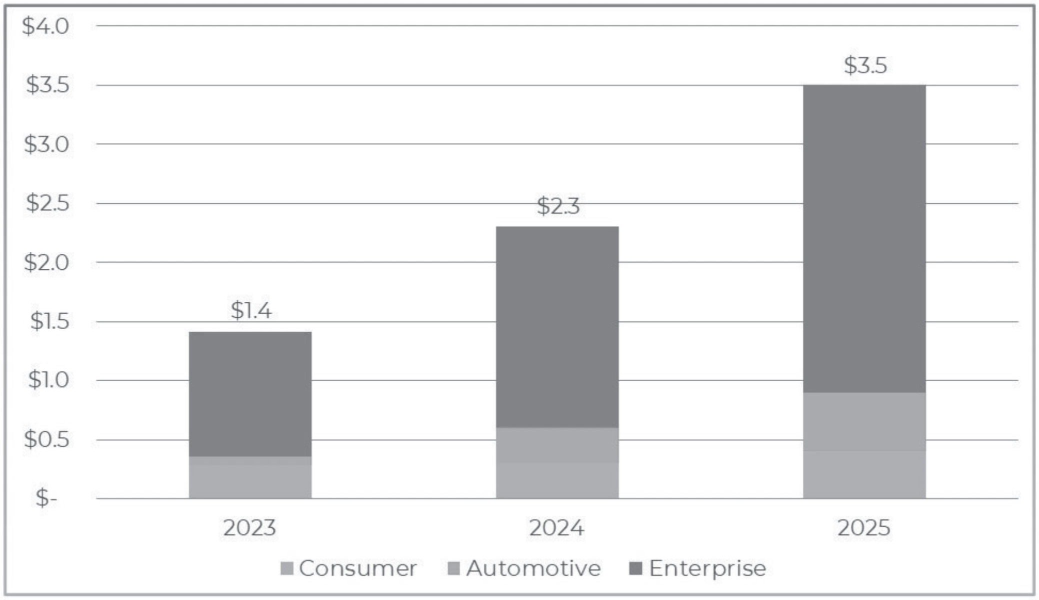
As a global wireless connectivity solutions provider, Airgain solves critical connectivity challenges across the value chain. We are transitioning from being exclusively a component manufacturer to a wireless system solutions provider, targeting higher levels of integration and complexity, as such, our growth strategy is focused on two key elements:

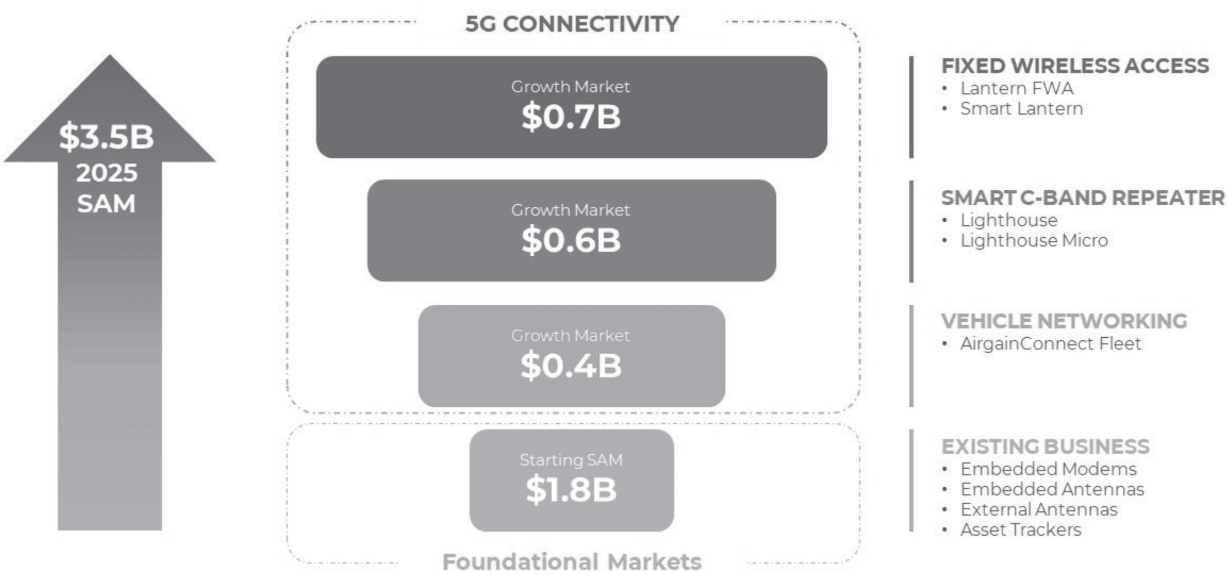
Grow our established business: Our embedded modems, custom IoT solutions, and IoT antennas in the enterprise market; embedded antennas in the consumer market; and our aftermarket antennas in the automotive market together provide our foundational business. Our reputation and relationships throughout the Distribution, Value-Added-Reseller (VAR), MSO, MNO, OEM, and ODM supply chain enables us to aggregate key voice-of-the-customer product needs and challenges which is critical for innovation. Our RF design and test capabilities enable our products to be differentiated on performance and to improve the end-customer experience – specifically in Wi-Fi, LTE, 5G, and GNSS integrated systems.

Expand and innovate in connectivity: We are transitioning from being exclusively a component manufacturer to a wireless systems solution provider. This transition started with the acquisition of NimbeLink in 2021 which brought expertise in asset tracker solutions and augmented our historical RF expertise with digital systems design, firmware, and cloud capabilities. We also launched AirgainConnect AC-HPUE – an integrated antenna plus high-power LTE modem targeting first responders and utilities. AC-HPUE provided invaluable experience for launching complex systems into new markets. Our focus since then has been on forming the internal building blocks, from talent to partnerships, to expand our connectivity offerings. In 2023, we announced our Lumos 5G Fixed Wireless Access Antenna, our Lantern 5G Outdoor Fixed Wireless Access solution, and our Lighthouse™ Smart Repeater platform. We recently announced our AirgainConnect Fleet (AC-Fleet) 5G Vehicle Gateway and our Smart LanternTM hybrid beam forming FWA solution. Our focus is on driving these innovative connectivity products to market and increasing our overall serviceable available market (SAM).

The following graphic provides a summary of our estimated SAM within each of our three markets. Based on publicly available market research and internal estimates, we project the SAM will grow from $1.3 billion in 2023 to $2.2 billion by 2024 and to $3.5 billion by 2025. While we estimate the consumer SAM to be relatively flat, we project the automotive SAM to grow with the launch of the AC-Fleet vehicle gateway, and we project the enterprise SAM to continue to expand, driven by asset trackers and Lantern 5G Fixed Wireless Access devices, and the anticipated market entry and growth of the Lighthouse smart repeaters.

Airgain Estimated SAM ($B)





Sales and Marketing

Our sales and marketing organizations work together closely to improve market awareness, build a strong sales pipeline, and cultivate ongoing customer relationships to drive sales growth.

Sales

Our global sales efforts consist of direct and indirect sales teams, and indirect channel partners. Our direct sales team consists of sales personnel based in the United States, Greater China, South Korea, and Europe, while our indirect channel partners consist of distributors, engineering design companies and outside sales representatives across North America, Asia, Europe, Australia, Middle East, and Latin America.

Our direct sales team is engaged in pre-sales, account management, and creating partnership opportunities with third parties such as service providers and – OEMs. The sales process includes meeting and qualifying potential customers, and actively managing the planning stage of devices they project to bring to market. Our field application engineers (FAEs) assist these programs by providing technical support to existing customers.

Our indirect channel partners provide lead generation, pre-sales support, product fulfillment and, in certain circumstances, post-sales customer service and support. This channel partner network often co-sells with our direct sales team. Our channel partners provide us with additional sales leverage by sourcing new prospects, providing technical support to existing customers, upselling additional use cases, and maintaining repeat business with existing customers. These channels partners provide added coverage to customers and prospects we cannot reach directly.

Marketing

Our marketing strategy is focused on building a competitive advantage for our brands and products in the marketplace. We target two types of customers. For embedded products such as our NimbeLink modems and consumer antennas, we target design teams within OEMs and ODMs. For our integrated products, such as our asset trackers, FWA Lantern, and AirgainConnect AC-Fleet, we target end user markets. We use both direct and indirect promotional methods to engage our audiences. Direct methods include advertising, web properties, marketing collateral, email campaigns, paid and organic social media, search engine marketing, media relations, content marketing, direct mail, tradeshows and events, and general lead generation tactics. Indirect methods include co-marketing efforts together with resellers, distributors, system integrators, hardware and software partners, and carriers both domestically and internationally.

Manufacturing and Operations

We are fabless and rely on a number of contract manufacturers (CMs) located in the United States, China, Taiwan, Vietnam, and Mexico. We generally have long-term relationships with our CMs, and we work together to control global product compliance, raw materials supply and cost, production part approval processes, assembly instructions, control plans, final testing, and on time shipment to our customers. We provide the control, test and measurement plans to the CMs to help ensure that each product conforms to the Airgain specifications, and we monitor the quality performance of our CMs through quality reports and periodic audits.

We maintain a close direct relationship with our CMs to help ensure that supply and quality meet our requirements. The contract manufacturing services required to manufacture our products can be satisfied by one or more of our CMs, however it may be time consuming and costly to qualify and implement new CM relationships. If one of our CMs suffers an interruption in their business, or experiences delays, disruptions, or quality control problems in their manufacturing operations, our ability to ship products to our customers could be delayed, and our business could be adversely affected. Our qualified CMs manufacture products according to our design specification, materials specification, quality standards, and delivery requirements. We have full control and authority over the selection of materials, manufacturing, and inspection processes. Since our products manufactured in China are predominantly shipped to ODMs and CMs within Asia, we have not experienced a significant impact as a result of the tariffs imposed on exports from China to the United States.

Research and Development

We invest considerable time and financial resources in research and development to engineer and deliver our products and solutions to market, while also enhancing our design and system integration capabilities and conducting quality assurance testing to improve our technology. As of December 31, 2023, we had a total of 63 employees engaged in research and development. Our engineering teams are located at research, design, and test centers in California, Arizona, Texas, Minnesota, and Florida, as well as the United Kingdom and China. Our engineering team actively participates in research and development activities to expand our capabilities and target applications for the consumer, enterprise, and automotive markets. We expect to continually expand our product offerings and technology solutions over time and to continue to invest significantly in ongoing research and development efforts.

Seasonality

Our operating results historically have not been subject to significant seasonal variations. However, our operating results are affected by how customers make purchasing decisions around local holidays in China. Although it is difficult to make broad generalizations, our sales tend to be lower in the first quarter of each year compared to other quarters due to the Lunar New Year. A general weakening of economic conditions may contribute to slower sales. Results for any quarter may not be indicative of the results achieved for the full fiscal year, and these patterns may change due to general customer demand or product cycles.

Competition

Because of our broad product line across several categories in the value chain, our competitive landscape is diverse and rapidly evolving.

Solution Providers

This category represents companies that manufacture a wide variety of products across the value chain including end-device hardware, software, components, services, and more. This includes Digi International Inc., Laird Connectivity, Multi-Tech Systems Inc., Nextivity Inc., Pulse Electronics, Samsara, Semtech , TE Connectivity, and Wilson Electronics, among others. With our shift in business model towards solutions, many of these companies are direct competitors. While some partnership opportunities do exist, most of these companies strive to solve similar problems as us with their broad portfolios and consultative sales approaches.

End-Device Manufacturers

This category represents companies that manufacture off-the-shelf products that are market ready, such as routers, gateways, cellular adapters, and more. This includes suppliers of vehicle networking platforms and fixed wireless devices. These manufacturers can act as customers, partners, or competitors to us, depending on the application and relationship. An end-customer may choose to bypass the design process entirely and purchase an off-the-shelf product to deliver device connectivity rather than embedding our modems and antennas. Our integrated products, such as the AC-Fleet, Lantern FWA (Fixed Wireless Access) and asset trackers, may compete directly with these off-the-shelf products or enhance their functionality. In addition, our Antenna+ product line is designed to enhance the signal and coverage of many of these devices.

Component Manufacturers

This category represents companies that manufacture a broad array of components that compete both directly and indirectly with our products. This includes Adant Technologies Inc., Asian Creation Communications Factory, Kyocera AVX, Baylin Technologies Inc., Blues Wireless, Fibocom, Fractus S.A., Honglin Technology Group Ltd., MobileMark, Nordic Semiconductor, Panorama Antennas, Parsec Technologies, Inc, Particle Industries Inc., PCTEL, Inc., Pinyon Technologies, Inc., Qualcomm, Quectel, Semtech, Sunwave Communications Co., Ltd., Telit, Ublox, Taoglas Limited, Wanshih Electronic Co. Ltd., WHA YU Industrial Co., Ltd, and 2J Antennas Group, among others. While we may choose to partner with some of these manufacturers to deliver products that shorten time to market, customers may also choose to complete the more intricate design work on their own using products manufactured by these companies

In-house Design and Engineering Teams

Several of our existing customers, including OEMs and ODMs which design and build complete wireless devices, also have internal resources to design, engineer, and produce antenna and modem solutions. In such cases, we compete against the captive resource of that ODM. Several ODMs, including Arcadyan Technology Corporation, Foxconn Electronics Inc., Gemtek, Zyxel Communications, Inc. (MitraStar Technology), and Wistron Corporation, design, manufacture, and sell complete wireless devices, in direct competition with us.

The principal competitive factors in our markets include: price and total cost of ownership as a result of reliability and performance issues; brand awareness and reputation; component performance, such as reliability, range and throughput; ability to integrate with other technology infrastructures; offerings across breadth of wireless products; design and testing capabilities; lead-time and flexibility to rapidly customize solutions to individual customer requirements; relationships with semiconductor/chipset vendors; intellectual property protection; and the ability to solve many complex RF problems across the entire spectrum of broadband connectivity.

Intellectual Property

We rely on patent, trademark, copyright and trade secret laws, confidentiality procedures, and contractual provisions to protect our technology.

As of December 31, 2023, our intellectual property portfolio comprised more than 280 patents that have been granted or applications that have been made public and submitted across the United States, Europe, and Asia. The scope of these patents encompasses our product offerings and technological advancements, with their terms of validity extending from the year 2024 until 2040. This patent collection encapsulates a diverse array of innovations pioneering antenna designs and structures, as well as the assembly and fabrication processes for a comprehensive spectrum of wireless communication technologies, including cellular, Wi-Fi, Bluetooth (BT), and Global Positioning System (GPS).

In line with our strategic evolution from a component supplier to a provider of comprehensive wireless system solutions, we have systematically grown our patent repository, escalating our filings to include broader wireless system functionalities and infrastructures.

Taken together, these patents with priority dates as far back as November 2003 form both a barrier to competition and a licensable asset for customers in the MIMO and antenna assembly categories.

Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy aspects of our products or obtain and use information that we regard as proprietary. We generally enter into confidentiality agreements with our employees, consultants, vendors, and customers, and generally limit access to and distribution of our proprietary information. However, we cannot ensure that the steps taken by us will prevent misappropriation of our technology. In addition, the laws of some foreign countries do not protect our proprietary rights to as great an extent as the laws of the United States, and many foreign countries do not enforce these laws as diligently as government agencies and private parties in the United States.

Our industry is characterized by the existence of many patents and frequent claims and related litigation regarding patent and other intellectual property rights. Leading companies in the technology industry have extensive patent portfolios. Third parties, including certain of these leading companies, may in the future assert patent, copyright, trademark and other intellectual property rights against us, our channel partners, or our customers.

Human Capital

As of December 31, 2023, we had a total of 122 employees and dedicated representatives, including 83 in the United States and 39 outside the United States. Among the total 122 employees and dedicated representatives, 63 were primarily engaged in research and development, 33 were primarily engaged in sales and marketing, 21 were primarily engaged in general and administration functions and 5 were primarily engaged in manufacturing operations. None of our employees are covered by a collective bargaining agreement or represented by a labor union. We consider our relationship with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, and incentivizing our management team and our employees and consultants. The principal purposes of our equity and cash incentive plans are to attract, retain and motivate personnel through the granting of stock-based and cash-based compensation awards to align our interests and the interests of our stockholders with those of our employees and consultants.

Available Information

We file electronically with the Securities and Exchange Commission, or SEC, our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended. We make available on our investor relations website at investors.airgain.com, free of charge, copies of these reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The public may read or copy any materials we file with the SEC at the SEC’s Public Reference Room at 100 F Street NE, Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that website is www.sec.gov.

We use our investor relations website as a means of disclosing material non-public, information and for complying with our disclosure obligations under Regulation FD. Investors should monitor such website, in addition to following our press releases, SEC filings and public conference calls and webcasts. Information relating to our corporate governance is also included on our investor relations website. The information in or accessible through the SEC and our website are not incorporated into, and are not considered part of, this filing. Further, our references to the URLs for these websites are intended to be inactive textual references only.

ITEM 1A. RISK FACTORS

You should carefully consider the following risk factors, together with the other information contained in this annual report on Form 10-K, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations," before deciding to purchase or sell shares of our common stock. We cannot assure you that any of the events discussed in the risk factors below will not occur. These risks could have a material and adverse impact on our business, results of operations, financial condition and growth prospects. If that were to happen, the trading price of our common stock could decline. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations or financial condition.

Summary of Risks Related to our Business

Our business is subject to numerous risks and uncertainties, including those described below. The principal risks and uncertainties affecting our business include, but are not limited to the following:

- The markets for our antenna and wireless systems solutions are developing and may not develop as we expect;
- Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or our guidance;
- Our antenna solutions and wireless connectivity solutions are subject to intense competition, including competition from our suppliers and the customers to whom we sell;
- Our future success depends on our ability to develop new products and successfully introduce new and enhanced products and services for the wireless market that meet the needs of our customers;
- If we are unable to manage our growth and expand our operations successfully, our business and operating results will be harmed, and our reputation may be damaged;
- We have a history of losses, including an accumulated deficit of $78.5 million at December 31, 2023, and we may not be profitable in the future;
- Any delays in our sales cycles could result in customers canceling purchases of our products;
- We sell to customers who are price conscious, and to a limited number of customers, who represent a significant portion of our sales. If we were to lose any of these customers or devices, our sales could decrease significantly;
- We are developing a number of our new products and wireless connectivity solutions in partnership with other companies. If any of these companies were to fail to perform, or our partnerships were to be unsuccessful, we may not be able to bring our solutions to market successfully or on a timely basis;
- We rely on a limited number of CMs to produce and ship our products, and the failure to manage our relationships with these parties successfully could adversely affect our ability to market and sell our products;
- If we are unable to protect our intellectual property rights, our competitive position could be harmed, or we could be required to incur significant expenses to enforce our rights;
- Our international sales and operations subject us to additional risks that can adversely affect our operating results and financial condition; and
- Our CMs purchase some components, subassemblies and products from a single or limited number of suppliers. The loss of any of these suppliers may substantially disrupt our ability to obtain orders and fulfill sales as we design in and qualify new components.

Risks Related to Our Business and Industry

The markets for our antenna and wireless systems solutions are developing and may not develop as we expect.

The wireless industry is characterized by rapidly evolving technologies, and the markets for our antenna systems and wireless connectivity solutions may not develop as we expect. It is difficult to predict customer adoption rates, customer demand for our antennas, the size and growth rate of our target markets, the entry of competitive products, or the success of existing competitive products. We have historically driven revenue growth primarily through the top North American video service providers, largely in the consumer market. Moving forward, our goal is to drive growth in the enterprise and automotive markets. These markets may develop at varying growth rates and our success in penetrating these markets will depend on various competitive factors across a number of developing industries. Any expansion in our markets depends on several factors. For example, any growth in the consumer market and any increase in demand for antenna products will depend on, among things, the cost, performance, and perceived value associated with our antennas and the ability for our antenna products to meet increased performance demands, refresh cycles and device form factors. Further, as we continue to transition to a wireless systems solution provider, increased growth in the enterprise and automotive markets will depend on, among things, acceptance of our solutions by our customers and performance of the networks on which our products operate. For example, AirgainConnect AC-Fleet solution is dependent on the carriers' networks that the AC-Fleet operates on and requires widespread commitments across multiple customer markets and budgets. The growth potential for AC-Fleet may be limited, and we will need to introduce new products in the AirgainConnect platform in order to continue to grow.

If our wireless solutions do not achieve widespread adoption, if there is a slower rollout than we expect in certain markets or there is a reduction in demand for our wireless connectivity solutions or antennas in our markets caused by a lack of customer acceptance, technological challenges, competing technologies and products, decreases in corporate spending, weakening economic conditions, or otherwise, it could result in reduced customer orders, early order cancellations, or decreased sales, any of which would adversely affect our business, operating results and financial condition.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or our guidance.

Our quarterly and annual operating results have fluctuated in the past and may fluctuate significantly in the future, which makes it difficult for us to predict our future operating results. The timing and size of sales of our products are variable and difficult to predict and can result in fluctuations in our net sales from period to period. In addition, our budgeted expense levels depend in part on our expectations of future sales. Because any substantial adjustment to expenses to account for lower levels of sales is difficult and takes time, we may not be able to reduce our costs sufficiently to compensate for an unexpected shortfall in net sales, and even a small shortfall in net sales could disproportionately and adversely affect our operating margin and operating results for a given quarter. Our net loss increased from $8.7 million in the year ended December 31, 2022 to $12.4 million in the year ended December 31, 2023 and the increase in net loss could continue in future. Prior to 2023, our net income was $0.9 million, $1.1 million and $3.7 million for the years ended December 31, 2019, 2017 and 2016.

Our operating results may also fluctuate due to a variety of other factors, many of which are outside of our control, including any change or volatility in U.S., European, Asian and global economic environments, and any of which may cause our stock price to fluctuate. Besides the other risks in this "Risk Factors" section, factors that may affect our operating results include:

- fluctuations in demand for our products and services;
- the inherent complexity, length and associated unpredictability of product development windows and product lifecycles;
- the timing and extent of investment in our targeted growth markets and the timing and amount of sales in such markets;
- our ability to develop, introduce and ship in a timely manner new products and product enhancements and anticipate future market demands that meet our customers' requirements, and provide adequate customer support for those products;
- changes in customers' budgets for technology purchases and delays in their purchasing cycles;

- global supply shortage including, but not limited to chips and modules, supply constraints relating to other materials and potential increasing shipping costs and related limitations on our ability to acquire mission critical components and our CM's abilities to obtain sufficient human resources to meet our global demand;
- inflation and other increases in the cost of components, consumables, labor and other manufacturing costs;
- changing market and economic conditions and, financial institution instability.
- any significant changes in the competitive dynamics of our markets, including new entrants, or further consolidation; the timing of product releases or upgrades by us or by our competitors;
- uncertainty surrounding the outcome of political elections in the U.S. and its effects on international relations, sanctions and tariffs;
- terrorism, political instability or war, and the imposition of sanctions or countermeasures by the U.S. and other countries in relation to such conflicts;
- public health crises regionally and globally, including pandemics and epidemics; and
- facility shutdowns related to local holidays in China and southeast Asia, affecting how customers make purchasing decisions.

The cumulative effects of the factors above could result in large fluctuations and unpredictability in our quarterly and annual operating earnings. Additionally this may result in higher prices from suppliers which could negatively affect gross margins and increase operating expenses. You should not rely on our past results as an indication of future performance.

In addition, the financial markets and the global economy may be adversely affected by the current or anticipated impact of military conflict, including the war between Russia and Ukraine, and the conflict related to China and Taiwan, political unrest, tensions, uncertainty in the Middle East, and global and regional, terrorism or other geopolitical events. Sanctions imposed by the United States and other countries in response to such conflicts, may also adversely impact the financial markets and the global economy, and any economic countermeasures by affected countries and others could exacerbate market and economic instability. In addition, concerns or adverse developments regarding liquidity risk related to financial institutions or the broader financial services industry may lead to market-wide liquidity shortages, impair the ability of us or other companies to access near-term working capital needs, and create additional market and economic uncertainty. There can be no assurance that future credit and financial market instability and a deterioration in confidence in economic conditions will not occur. Our general business strategy and operating results may be adversely affected by any such economic downturn, liquidity shortages, volatile business environment, or continued unpredictable and unstable market conditions. In addition, there is a risk that one or more of our current service providers, financial institutions, manufacturers, suppliers or customers may be adversely affected by the foregoing risks, which could adversely affect our business and operating results be adversely affected by the foregoing risks.

If we are unable to manage our growth and expand our operations successfully, our business and operating results will be harmed, and our reputation may be damaged.

We have expanded our operations significantly in the last several years and anticipate that further significant expansion will be required to achieve our business objectives. The growth and expansion of our business and product offerings places a continuous and significant strain on our management, operational and financial resources. As we transition to a wireless system solutions provider, we expect these challenges to increase. Any such future growth would also add complexity to and require effective coordination throughout our organization. We use the services of third parties to perform tasks including design services and sales and marketing. Our growth strategy may entail expanding our group of contractors or consultants to implement additional functions going forward. Because we rely on consultants, effectively outsourcing key functions of our business, we will need to be able to manage these consultants to ensure that they successfully carry out their contractual obligations and meet expected deadlines. However, if we are unable to effectively manage our outsourced activities or if the quality of the services provided by consultants is compromised for any reason, our ability to provide quality products in a timely manner could be harmed, which may have a material adverse effect on our business operating results and financial condition.

To manage any future growth effectively, we must continue to improve and expand our information technology and financial infrastructure, our operating and administrative systems and controls, and our ability to manage headcount, capital and processes in an efficient manner. We may not be able to successfully implement improvements to these systems and processes in a timely or efficient manner, which could result in additional operating inefficiencies and could cause our costs to increase more than planned. If we do increase our operating expenses in anticipation of the growth of our business and this growth does not meet our expectations, our operating results may be negatively impacted. If we are unable to manage future expansion, our ability to provide high quality products and services could be harmed, which could damage our reputation and brand and may have a material adverse effect on our business, operating results and financial condition.

Our antenna solutions and wireless connectivity solutions are subject to intense competition, including competition from our suppliers and the customers to whom we sell.

Antenna solutions is an established technical field with low intellectual property and technological barriers to entry. Antenna competition exists globally for all areas of our business and product lines. The markets in which we compete are rapidly evolving and intensely competitive, and we expect competition to increase in the future from established competitors and new market entrants. The markets are influenced by, among others, brand awareness and reputation, price, strength and scale of sales and marketing efforts, professional services and customer support, product features, reliability and performance, scalability of products, and breadth of product offerings. Due to the proprietary nature of some of our products, competition occurs primarily at the design stage. As a result, a design win by our competitors or by us typically limits further competition regarding that design. This competition could result in increased pricing pressure, reduced profit margins, increased sales and marketing expenses and failure to increase, or the loss of, market share, any of which would likely seriously harm our business, operating results or financial condition. In addition, some of our ODM, OEM and carrier and retail-focused end-customers that drive the use of our antenna solutions have and, in the future, may build internal antenna design teams that compete with our products. From a cost and control perspective, our products generally cost more than our competitors’ products. If our ability to design antenna solutions is deemed to be on par or of lesser value than competing solutions, we could lose our customers and prospects.

Additionally, our movement into more system-based solutions may bring more competitors into our markets than we have traditionally faced. As our solutions begin to contain more system components and commensurate higher average selling prices, the resulting product categories may attract additional competitors or our customers may be more likely to begin to develop competing products.

New entrants and the introduction of other distribution models in our markets may harm our competitive position.

The markets for development, distribution, and sale of our products are rapidly evolving. New entrants seeking to gain market share by introducing new technology and new products may make it more difficult for us to sell our products, and could create increased pricing pressure, reduced profit margins, increased sales and marketing expenses, or the loss of market share or expected market share, any of which may significantly harm our business, operating results and financial condition.

Our future success depends on our ability to develop new products and successfully introduce new and enhanced products and services for the wireless market that meet the needs of our customers.

Our sales depend on our ability to anticipate our existing and prospective customers’ needs and develop products and systems solutions that address those needs. Our future success will be contingent on our ability to introduce new solutions for wireless applications, anticipate improvements and enhancements in wireless technology and wireless standards, and to develop solutions that are competitive in the rapidly evolving wireless industry. In furtherance of these efforts, we will continue to invest significantly in ongoing research and development. However such investments may not translate into material enhancements to our wireless solutions, which is important for us to compete effectively. As we complete our transition into a wireless systems solutions provider, we anticipate the need to increase our investment in research and development to stay on the leading edge of next generation development and to align ourselves with the rapidly evolving technology needs of the industry. Moreover, the introduction of newly integrated wireless platforms and product and system enhancements will require coordination of our engineering efforts with those of our customers, carriers, suppliers, and manufacturers to efficiently achieve our growth objectives. We expect these coordination efforts to increase substantially in the future as we work with OEM partners on new proof-of-concept and reference designs earlier in the development cycle. If we fail to coordinate these efforts, develop product enhancements or introduce new solutions that meet the needs of our customers as scheduled, our operating results will be materially and adversely impacted, and our business and prospects will be harmed. We cannot assure that solution introductions will meet the anticipated release schedules or that our wireless solutions will be competitive in the market.

The introduction of the next generation AirgainConnect platform, and the transition to a more expansive level of advanced solutions, requires coordination of efforts and increased time and resources. If we fail to develop competitive solutions for customers with outstanding quality within the identified market window, our operating results may be materially and adversely impacted. As we rollout follow-on products and accessories for the AirgainConnect Fleet solution, we may not be able to successfully develop to conform to carrier PTCRB (PCS Type Certification Review Board) certifications of such products. Furthermore, the stringent customer demands for these advanced solutions requires substantial ongoing effort and investment for solution maintenance, support, and evolution. If we are unable to continually provide such effort and investment to customers, our customers' business could be adversely impacted, or customers could switch to competitor solutions, which would have an adverse impact on our operating results.

Furthermore, given the rapidly evolving nature of the wireless market, there can be no assurance our products and technology will not be rendered obsolete by alternative or competing technologies. The markets in which we operate are characterized by changing technology and evolving industry standards, which includes the introduction and implementation of Wi-Fi 7 and emerging 5G cellular standards. Despite years of experience in meeting customer design requirements with the latest in technological solutions, we may not be successful in identifying, developing and marketing products or systems that respond to rapid technological change, evolving technical standards and systems developed by others. Our competitors may develop technology that better meets the needs of our customers. If we do not continue to develop, manufacture and market innovative technologies or applications that meet customers' requirements, sales may suffer, and our business may not continue to grow in line with historical rates or at all.

Any delays in our sales cycles could result in customers canceling purchases of our products.

Sales cycles for some of our products can be lengthy, often lasting several months to a year or longer. In addition, it can take additional time before a customer commences volume production of equipment that incorporates our products. Sales cycles can be lengthy for several reasons, including:

- our OEM customers and carriers usually complete a lengthy technical evaluation of our products, over which we have no control, before placing a purchase order;
- the commercial introduction of our products by OEM customers and carriers is typically limited during the initial release to evaluate product performance;
- the development and commercial introduction of products incorporating new technologies frequently are delayed; and
- certain customers of advanced antenna systems and integrated wireless solutions require successful field trials before committing to purchase our solutions, which could delay the customer decision making process.

A significant portion of our operating expense is relatively fixed and is based in large part on our forecasts of volume and timing of orders. The lengthy sales cycles make forecasting the volume and timing of product orders difficult. In addition, the delays inherent in lengthy sales cycles raise additional risks of customer decisions to cancel or change product phases. If customer cancellations or product changes were to occur, this could result in the loss of anticipated sales without sufficient time for us to reduce our operating expenses. We currently maintain significant inventories to meet forecasted future demand due to the supply chain shortages. If the forecasted demand does not materialize into purchase orders for these products, we may be required to write off our inventory balances or reduce the value of our inventory, based on a reduced sales price. A write off of the inventory, or a reduction in the inventory value due to a sales price reduction, could have an adverse effect on our financial condition and operating results.

We have a history of losses, and we may not be profitable in the future.

Before 2013 we had incurred net losses in each year since our inception. As a result, we had an accumulated deficit of $78.5 million at December 31, 2023. Airgain is transitioning to a wireless systems solutions company. Because the market for wireless systems solutions is rapidly evolving, it is difficult for us to predict our operating results. We expect our operating expenses to increase over the next several years as we hire additional personnel, particularly in engineering, sales support, customer service and experience, and marketing, and continue to develop new wireless ecosystems to address new and evolving markets. In addition, as a public company we will incur additional significant legal, accounting, and other expenses. If our sales do not increase to offset these increases in our operating expenses, we may not be profitable in future periods. Our historical sales growth has been inconsistent and should not be considered indicative of our future performance. Any failure to sustain or increase our profitability consistently could cause the value of our common stock to materially decline.

A limited number of customers and devices represent a significant portion of our sales. If we were to lose any of these customers or devices, our sales could decrease significantly.

Customers that accounted for 10% or more of our total revenue provided approximately 40% of sales in the aggregate for the year ended December 31, 2023. Although our top customers that pay for our products have historically been ODMs and distributors, it is primarily the OEMs, carrier customers and retail-focused end-customers that drove the use of our antenna solutions and the purchase by the ODMs and distributors of our antenna solutions. In addition, a few end-customer devices which incorporate our antenna products comprise a significant amount of our sales, and the discontinuation or modification of such devices may materially and adversely affect our sales and results of operations. Moving forward, as we transition to a wireless systems solutions provider, we expect a shift toward external wireless solutions and antenna technologies in the automotive and enterprise markets that may result in a corresponding shift in the customer mix. Any significant loss of, or a significant reduction in purchases by, these other significant customers or customers that drive the use of our antenna solutions or a modification or discontinuation of a device which constitutes a significant portion of sales could have an adverse effect on our financial condition and operating results.

We sell to customers who are price conscious.

Our customers compete in segments of the electronics market. The electronics market is characterized by intense competition as companies strive to come to market with innovative designs that attract customers based upon design, performance, cost, ease of use, and convenience. Product lifecycles can be extremely short as companies try to gain advantage over their competitors. Because of the high design and engineering costs, companies that are customers or prospects for antenna solutions are cost conscious. As a result, our customers and prospects demand price cuts in established products and negotiate aggressively for lower pricing on new products. Because of the intense competition in the antenna solution market, we encounter situations that lead to difficult price negotiations potentially resulting in lower margins than forecast. Our products generally cost more than our competitors' products. To address these pricing constraints and remain competitive, we must consistently design high quality antenna solutions that are deemed a better value than competing solutions, while also decreasing costs.

We rely on a limited number of CMs to produce and ship our products, and the failure to manage our relationships with these parties successfully could adversely affect our ability to market and sell our products.

We outsource the manufacturing, assembly and some of the testing of our products.,. We have over the past two years engaged additional CMs outside of China, including Vietnam and Mexico, to expand our capacity, and to diversify the global regions in which our products are manufactured. These CMs are relied upon to manufacture, control quality of, and ship our products. We do not have long-term contracts with these manufacturers that commit them to manufacture products for us and we have limited direct control over their activities. Furthermore, political unrest or political instability, military conflict in any country in which our CMs are located, war between Russia and Ukraine, and the conflict related to China and Taiwan, political unrest, tensions and uncertainty in the Middle East, and global and regional, terrorism or other geopolitical events may have an adverse effect on our contract manufacturer's ability to deliver quality products on time. Any significant change in our relationship with these manufacturers could have a material adverse effect on our business, operating results, and financial condition. We make substantially all of our purchases from our CMs on a purchase order basis. Our CMs are not required to manufacture our products for any specific period or in any specific quantity. We expect that it would take approximately six to nine months to transition manufacturing, quality assurance, and shipping services to new providers. Relying on CMs for manufacturing, quality assurance, and shipping also presents significant risks to us, including the inability of our CMs to:

- qualify appropriate component suppliers;
- manage capacity during periods of high demand;
- meet delivery schedules;
- assure the quality of our products;

- ensure adequate supplies of materials;
- protect our intellectual property; and
- deliver finished products at agreed-upon prices.

Any failure by us or our CMs to timely deliver products of satisfactory quality or in sufficient quantities in compliance with applicable laws could hurt our reputation, cause customers to cancel orders or refrain from placing new orders for our products, which could have a material adverse effect on our business, operating results, and financial condition.

We may experience delays in obtaining product from manufacturers and may not be a high priority for our manufacturers.

The ability and willingness of our CMs to perform is largely outside of our control. We believe that our orders may not represent a material portion of our CMs' total orders and, as a result, fulfilling our orders may not be a priority if our CMs are constrained in their abilities or resources to fulfill all of their customer obligations in a timely manner. If any of our CMs suffers an interruption in its business, experiences delays, disruptions, or quality control problems in its manufacturing operations or we have to change or add additional CMs, our ability to ship products to our customers would be delayed and our sales could become volatile and our cost of sales may increase. For example, throughout 2021 and 2022, we experienced a disruption in our supply chain for certain components located in Asia and made several purchases of available inventory in order to secure supply for our customers, sometimes at higher than our traditional prices. Additionally, any or all of the following could either limit supply or increase costs, directly or indirectly, to us or our CMs:

- financial problems of either CMs or component suppliers;
- reservation of manufacturing capacity at our contract manufactures by other companies, inside or outside of our industry;
- changes or uncertainty in tariffs, economic sanctions, and other trade barriers, political unrest, or military conflict in regions where manufacturers are located; and potential conflicts involving other countries in Asia such as China and Taiwan;
- industry consolidation occurring within one or more component supplier markets, such as the semiconductor market; and
- labor strikes or shortages, or restrictions imposed to limit pandemic or epidemics.

We cannot predict with certainty in the future whether a pandemic or epidemic will cause delays or disrupt our product shipments or impact manufacturing. If such disruption were to extend over a prolonged period, it could have a material impact on our sales and business and those of our customers.

Our CMs purchase some components, subassemblies and products from a single or limited number of suppliers. The loss of any of these suppliers may substantially disrupt our ability to obtain orders and fulfill sales as we design in and qualify new components.

We rely on third-party components and technology companies to provide contents of our bills of material to that ultimately configure the devices that are deployed in our integrate solutions. Thus, we rely on our CMs to obtain the components and subassemblies necessary for the manufacture of our devices. Throughout 2021 and 2022, we experienced shortages in supply of components we use in our products. In 2023 we saw relief on supply disruptions due to overcorrection. A return to such shortages or other supply disruptions are possible, as well as inflation of prices of certain components, and our ability to predict the availability and pricing of such components is limited. Over the past three years, there have been and continue to exist fluctuations between shortages of certain electronic components used in our industry and a surplus that have led to ongoing uncertainty regarding lead times for the manufacture of certain components in some of our products. If shortages return or occur in the future, as , our business, operating results and financial condition would be materially adversely affected. Unpredictable price increases of such components due to market demand may occur as well. While components and supplies are generally available from a variety of sources, our CMs depend on a single or limited number of suppliers for several components for our products. Further, certain products may utilize custom components available from only one or a limited number of sources. When a component or product uses new technologies, capacity constraints may exist until the suppliers' manufacturing capacity has increased. Many factors may affect the continued availability of these components at acceptable prices, including if those suppliers decide to concentrate on the production of common components instead of components customized to meet our requirements. There is no assurance that the supply of such components will not be delayed or constrained. If our suppliers of these components or technology were to enter into exclusive relationships with other providers of wireless networking equipment or were to discontinue providing such components and technology to us and we were unable to replace them cost effectively, or at all, our ability to provide our products would be impaired. Additionally, poor quality in any of the single or limited sourced components in our products could result in lost sales or lost sales opportunities. Our CMs generally rely on purchase orders rather than long-term contracts with these suppliers. As a result, even if available, our CMs may not be able to secure sufficient components at reasonable prices or of acceptable quality to build our products in a timely manner. Therefore, we may be unable to meet customer demand for our products, which would have a material adverse effect on our business, operating results, and financial condition.

We rely significantly on channel partners to sell and support our products, and the failure of this channel to be effective could materially reduce our sales.

We believe that establishing and maintaining successful relationships with these channel partners is, and will continue to be, important to our financial success. Recruiting and retaining qualified channel partners and training them in our technology and product offerings require significant time and resources. To develop and expand our channel, we must continue to scale and improve our processes and procedures that support our channel partners, including investment in systems and training.

Existing and future channel partners will only work with us if we are able to provide them with competitive products on terms that are commercially reasonable to them. If we fail to maintain the quality of our products or to update and enhance them, existing and future channel partners may elect to work instead with one or more of our competitors. If channel partners stop actively selling our products, we may experience further decline in sales. In addition, the terms of our arrangements with our channel partners must be commercially reasonable for both parties. If we are unable to reach agreements that are beneficial to both parties, then our channel partner relationships will not succeed.

We have no minimum purchase commitments with any of our channel partners, and our contracts with channel partners do not prohibit them from offering products or services that compete with ours, including products they currently offer or may develop in the future and incorporate into their own systems. Some of our competitors may have stronger relationships with our channel partners than we do, and we have limited control, if any, as to whether those partners use our products, rather than our competitors' products, or whether they devote resources to market and support our competitors' products, rather than our offerings.

The reduction in or loss of sales by these channel partners could materially reduce our sales. If we fail to maintain relationships with our channel partners, fail to develop new relationships with other channel partners in new markets, fail to manage, train or incentivize existing channel partners effectively, fail to provide channel partners with competitive products on terms acceptable to them, or if these channel partners are not successful in their sales efforts, our sales may decrease and our operating results could suffer.

Defects in our products or poor design and engineering services could result in lost sales and subject us to substantial liability.

Our advanced wireless connectivity technologies and systems are a critical element in determining the operating performance of our customers' products. If our connectivity solutions perform poorly, whether due to design, engineering, placement, failure to properly support the products, or other reasons, we could lose sales. In certain cases, if our connectivity solutions are found to be the component that leads to failure or a failure to meet the performance specifications of our customer, we could be required to pay monetary damages to our customer. Real or perceived defects or errors in our connectivity solutions could result in claims by channel partners and customers for losses they sustain. If channel partners or customers make these types of claims, we may be required, or may choose, for customer relations or other reasons, to expend additional resources to help correct the problem, including warranty and repair costs, process management costs and costs associated with remanufacturing our inventory. Liability provisions in our standard terms and conditions of sale may not be enforceable under some circumstances or may not fully or effectively protect us from claims and related liabilities and costs. In addition, regardless of the party at fault, errors of these kinds divert the attention of our engineering personnel from our product development efforts, damage our reputation and the reputation of our products, cause significant customer relations problems and can result in product liability claims. We maintain insurance to protect against certain types of claims associated with the use of our products, but our insurance coverage may not adequately cover any such claims. In addition, even claims that ultimately are unsuccessful could result in expenditures of funds in connection with litigation and divert management's time and other resources. We also may incur costs and expenses relating to a recall of one or more of our products.

The process of identifying recalled products that have been widely distributed may be lengthy and require significant resources, and we may incur significant replacement costs, contract damage claims from our customers and significant harm to our reputation. The occurrence of these problems could result in the delay or loss of market acceptance of our products and could adversely affect our business, operating results and financial condition.

The loss of key personnel or an inability to attract, retain and motivate qualified personnel may impair our ability to expand our business.

Our success depends upon the continued service and performance of our senior management team and key technical, marketing and production personnel. We have experienced management turnover in the past. The replacement of any member of our senior management team or other key employees or consultants involves significant time and costs and may significantly delay or prevent the achievement of our business objectives.

Our future success also depends, in part, on our ability to continue to attract, integrate and retain highly skilled personnel. Competition for highly skilled personnel, especially our design and technical personnel is frequently intense. As the source of our technological and product innovations, our design and technical personnel represent a significant asset. Any inability to retain, attract or motivate such personnel could have a material adverse effect on our business and results of operations. Further, competition for highly skilled personnel is frequently intense. Any difficulties in obtaining or retaining human resource competencies we need to achieve our business objectives may have an adverse effect on our performance.

Our inability to raise additional capital on acceptable terms in the future may limit our ability to develop and commercialize new solutions and technologies and expand our operations.

If our available cash balances and anticipated cash flow from operations are insufficient to satisfy our liquidity requirements, including because of lower demand for our products as a result of other risks described in this "Risk Factors" section and elsewhere in this annual report, we may seek to raise additional capital through equity offerings, debt financings, collaborations or licensing arrangements. We may also consider raising additional capital in the future due to liquidity considerations or to expand our business, pursue strategic investments, take advantage of financing opportunities, or other reasons. For example, in March 2024, we entered into an at-the-market issuance sales agreement (the Sales Agreement) with Craig-Hallum Capital Group LLC (the Agent), pursuant to which we may, from time to time, sell shares of our common stock having an aggregate offering price of up to $5 million in "at the market" offerings through or to the Agent, as sales agent or principal. However, there can be no assurance that the Agent will be successful in consummating future sales based on prevailing market conditions or in the quantities or at the prices that we deem appropriate. In addition, the Sales Agreement may be terminated by us or the Agent at any time upon specified notice to the other party, or by the Agent at any time in certain circumstances, including the occurrence of a material adverse change.

Additional funding may not be available to us on acceptable terms, or at all. If we raise funds by issuing equity securities, dilution to our stockholders could result. Any equity securities issued also may provide for rights, preferences or privileges senior to those of holders of our common stock. The terms of debt securities issued, or borrowings could impose significant restrictions on our operations. The incurrence of indebtedness or the issuance of certain equity securities could result in increased fixed payment obligations and could also result in restrictive covenants, such as limitations on our ability to incur additional debt or issue additional equity, limitations on our ability to acquire or license intellectual property rights, and other operating restrictions that could adversely affect our ability to conduct our business. In addition, the issuance of additional equity securities by us, or the possibility of such issuance, may cause the market price of our common stock to decline. The global credit and financial markets have in the past experienced extreme volatility and disruptions (including as a result of pandemic, war and conflict and liquidity concerns regarding financial institutions and others in the financial services industry). If the equity and credit markets are volatile or deteriorate, or if adverse developments are experienced by financial institutions, it may make any necessary debt or equity financing more difficult to obtain, more costly, more onerous with respect to financial and operating covenants, and more dilutive. If we do not have, or are not able to obtain, sufficient funds, we may have to delay development or commercialization of our products or license to third parties the rights to commercialize products or technologies that we would otherwise seek to commercialize. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or our products, or to grant licenses on terms that are not favorable to us. If we are unable to raise adequate funds, we may have to liquidate some or all of our assets, or delay, reduce the scope of or eliminate some or all of our development programs. We also may have to reduce marketing; customer support or other resources devoted to our products or cease operations. Any of these actions could harm our business, operating results and financial condition.

If we raise additional capital through credit facilities or debt financing, the terms of any new debt could further restrict our ability to operate our business.

We may enter into credit facilities with banks or secure other debt financing that could require us to provide a security interest in our assets and/or place restrictions on our operating and financial flexibility. Any such credit facility or debt instrument could contain customary affirmative and negative covenants and events of default applicable to us and our subsidiaries. The affirmative covenants could include, among others, covenants requiring us and our subsidiaries to maintain our respective legal existence and governmental approvals, deliver certain financial reports, maintain insurance coverage, keep inventory, if any, in good and marketable condition and protect material intellectual property. The negative covenants could include, among others, restrictions on us and our subsidiaries from transferring collateral, incurring additional indebtedness, engaging in mergers or acquisitions, paying dividends or making other distributions, making investments, creating liens, selling assets and making any payment on subordinated debt, in each case subject to certain exceptions. If we default under the facility or debt instrument, the lender or debtholders may accelerate all of our repayment obligations and take control of our pledged assets, potentially requiring us to renegotiate the facility or debt on terms less favorable to us or to immediately cease operations. Further, if we are liquidated, the lender's or debt holders' right to repayment would be senior to the rights of the holders of our common stock to receive any proceeds from the liquidation. The lender or debt holders could declare a default upon the occurrence of any event that they interpret as a material adverse effect as defined under the applicable agreement, thereby requiring us to repay the loan or debt immediately or to attempt to reverse the declaration of default through negotiation or litigation. Any declaration by the lender or debtholders of an event of default could significantly harm our business and prospects and could cause the price of our common stock to decline.

Our business may suffer if our strategic alliances are not successful.

We enter into strategic alliances and other relationships with companies whose capabilities complement our own. The objectives and goals for a strategic alliance can include one or more of the following: technology exchange, product development, joint sales and marketing, or new-market creation. To be successful, we must first be able to define, identify and secure alliance partners which align with our growth and technological plans. We cannot be certain that our alliance partners will provide us with the support we anticipate, or that such alliance or other relationships will be successful in creating new or improved products. Our success is also highly dependent upon our ability to manage the alliances, promote the benefits to us, and to not prohibit or discourage other opportunities which may be beneficial to us in the future. Also, certain provisions of alliance agreements may include restrictions that limit our ability to independently pursue or exploit the developments under such strategic alliances. If a strategic alliance fails to perform as expected or if the relationship is terminated, we could experience delays in new product development or impairment of our relationships with customers, and our ability to develop new solutions in response to industry trends or changing technology may be impaired and our results of operations could be adversely affected.

We are developing a number of our new products and wireless connectivity solutions in partnership with other companies. If any of these companies were to fail to perform, or our partnerships were to be unsuccessful, we may not be able to bring our solutions to market successfully or on a timely basis.

We have partnered, and expect to continue to partner, with certain companies to further advance or develop our wireless connectivity solutions and develop or expand on new and existing technologies. These arrangements involve the commitment by each company of various resources, including technology, and research and development. If these arrangements do not develop as expected, especially those that involve our proprietary technologies, or if the products and/or services produced by our partners do not meet the required quality standards, our ability to introduce new antenna products and wireless connectivity solutions successfully and on schedule may be limited. Further, we cannot provide any assurances that our existing partnerships will be maintained successfully or at all, the failure of which could have a material adverse effect on our business and results of operations. If existing partnership entity has any technical difficulties, if our partnership with them does not continue to develop, or if the technology developed in partnership does not develop or the partnership entity does not perform as expected or suffers market-launch delay or project-cost overrun, our sales may decrease and our operating results could suffer.

We are subject to the risk that third-party consultants will not perform their tasks effectively and that we will be unsuccessful in operating our business as a result.

We have in the past relied on third parties, such as sales consultants and engineering contractors, for a portion of the design and sales and marketing of our products. In the future, we may rely on third-party consultants in addition to our own employees to perform the daily tasks necessary to operate our business in certain areas, including sales and engineering, and cannot ensure that third-party consultants will be able to complete their work for us in a timely manner. The failure of any third-party consultants to perform as anticipated could result in substantial costs, divert management's attention from other strategic activities, or create other operational or financial problems for us. Terminating or transitioning arrangements with key consultants could result in additional costs and a risk of operational delays, potential errors and possible control issues as a result of the termination or during the transition. Accordingly, our reliance on third parties exposes us to the risk that our business will be unsuccessful if they do not design and sell our product as expected.

Our acquisitions expose us to risks that could adversely affect our business and adversely affect our operating results, financial condition, and cash flows.

As part of our strategy to develop and identify new products, services and technologies, we have made, and may continue to make, acquisitions of select assets and businesses. Integrating any newly acquired business could be expensive and time-consuming. Integration efforts often take a significant amount of time, place a significant strain on managerial, operational and financial resources and could prove to be more difficult or expensive than predicted. The diversion of management's attention and any delay or difficulties encountered in connection with any future acquisitions we may consummate could result in the disruption of on-going business or inconsistencies in standards and controls that could negatively affect our ability to maintain third-party relationships.

When pursuing acquisitions, we may not be able to find suitable acquisition candidates, and we may not be able to complete such acquisitions on favorable terms, if at all. Moreover, we may need to raise additional funds through public or private debt or equity financing, or issue additional shares, to acquire any businesses or products, which may result in dilution for stockholders or the incurrence of indebtedness. Any acquisitions we complete, may not ultimately strengthen our competitive position or achieve our goals, and could be viewed negatively by our end-customers, investors and financial analysts. Acquisitions involve many risks. An acquisition may negatively affect our operating results, financial condition or cash flows because it may require us to incur charges or assume substantial debt or other liabilities, may cause adverse tax consequences or unfavorable accounting treatment, may expose us to claims and disputes by third parties, including intellectual property claims and disputes, or may not generate sufficient financial return to offset additional costs and expenses related to the acquisition.

Our ability to use our net operating loss carryforwards and tax credit carryforwards to offset future taxable income or income tax liabilities for U.S. federal income tax purposes may be subject to limitations, and transfers of shares of our common stock could cause us to experience an "ownership change" that could limit our ability to utilize our net operating loss carryforward and tax credit carryforwards.

As of December 31, 2023, we had net operating loss (NOL) carryforwards of $23.2 million for federal income tax purposes and $11.5 million for state income tax purposes, subject to limitations may be available to offset our future taxable income, if any. Our federal and state NOL carryforwards begin to expire in 2026. Federal NOLs generated in taxable years beginning after December 31, 2017, however will carryforward indefinitely and may generally only be used to offset 80% of taxable income in taxable years beginning after December 31, 2020. As of December 31, 2023, we also had federal and state research and development and other tax credit carryforwards of approximately $2.1 million and $1.8 million, respectively, available to reduce future income tax liabilities, subject to limitations. Our federal tax credit carryforwards begin to expire in 2026 and our state tax credits will carryforward indefinitely. These NOL and tax credit carryforwards could expire unused, to the extent subject to expiration, and be unavailable to offset future taxable income or income tax liabilities.

In addition, in general, under Sections 382 and 383 of the U.S. Internal Revenue Code of 1986, as amended (the Code), a corporation that undergoes an "ownership change" is subject to limitations on our ability to use pre-change NOL and tax credit carryforwards to offset future taxable income and income taxes, respectively. For these purposes, an ownership change generally occurs where the aggregate change in stock ownership of one or more stockholders or groups of stockholders owning at least 5% of a corporation's stock exceeds 50 percentage points over a rolling three-year period. The Company's use of federal and state NOL and tax credit carryforwards could be limited further by ownership changes. We have recorded a $14.6 million valuation allowance related to our NOL carryforwards and other deferred tax assets due to the uncertainty of the ultimate realization of the future tax benefits of such assets.

If we are unable to implement and maintain effective internal control over financial reporting in the future, the accuracy and timeliness of our financial reporting may be adversely affected. In addition, because of our status as a non-accelerated filer, you will not be able to depend on any attestation from our independent registered public accounting firm as to our internal control over financial reporting for the foreseeable future.

The Sarbanes-Oxley Act of 2002, as amended (the Sarbanes-Oxley Act), requires, among other things, that we maintain effective disclosure controls and procedures and controls over financial reporting. In particular, we are required to perform system and process evaluations and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. We are required to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting which began for our fiscal year ending December 31, 2017. However, our independent registered public accounting firm will not be required to attest to the effectiveness of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act until the time we are no longer considered a non-accelerated filer. Accordingly, you will not be able to depend on any attestation concerning our internal control over financial reporting from our independent registered public accounting firm for the foreseeable future.

Compliance with environmental matters and worker health and safety laws could be costly, and noncompliance with these laws could have a material adverse effect on our operating results, expenses and financial condition.

Some of our operations use substances regulated under various federal, state, local and international laws governing the environment and worker health and safety, including those governing the discharge of pollutants into the ground, air and water, the management and disposal of hazardous substances and wastes, and the cleanup of contaminated sites. Some of our products are subject to various federal, state, local and international laws governing chemical substances in electronic products. We could be subject to increased costs, fines, civil or criminal sanctions, third-party property damage or personal injury claims if we violate or become liable under environmental and/or worker health and safety laws.

Our business and prospects depend on the strength of our market efforts and our brand. Failure to maintain and enhance our brand would harm our ability to maintain and expand our base of customers.

Maintaining and enhancing our brand is important to maintaining and expanding our base of customers who purchase our products. This will depend largely on our ability to continue to provide high-quality solutions, and we may not be able to do so effectively. While we may engage in a broader marketing campaign to further promote our brand, this effort may not succeed. Our efforts in developing our brand may be affected by the marketing efforts of our competitors. If we are unable to cost-effectively maintain and increase awareness of our brand, our business, results of operations and financial condition could be harmed. Our brand may be impaired by other factors, including product malfunctions. Any inability to effectively police our trademark rights against unauthorized uses by third parties could adversely impact the value of our trademarks and our brand recognition. If we fail to maintain and enhance our brand, or if we need to incur unanticipated expenses to establish our brand in new markets, our operating results would be negatively affected from reduced sales and increased marketing expenses.

Our financial condition and results of operations could be adversely affected by the outbreak of contagious diseases, including pandemics and epidemics.

Our business could be adversely affected by the effects of a widespread outbreak of contagious disease, including any pandemic or epidemic. For example, the COVID-19 pandemic in 2020 created considerable instability and disruption in the U.S. and world economies and had a material and adverse effect on our business and operations. The COVID-19 pandemic caused disruption and restrictions on our and our customers’ ability to travel, temporary closures of our office buildings and the facilities of our customers or suppliers, cancellations or modification of key industry marketing events, disruptions with our CMs and suppliers located in affected regions and overall adversely affect development of and sales for our products and solutions.

Future pandemics or other public health epidemics may have material adverse effect on our business, financial condition and results of operations, and may also have the effect of heightening many of the other risks described in this "Risk Factors" section.

Risks Relating to Intellectual Property

If we are unable to protect our intellectual property rights, our competitive position could be harmed, or we could be required to incur significant expenses to enforce our rights.

Our ability to compete effectively is dependent in part upon our ability to protect our proprietary technology. We rely on patents, trademarks, trade secret laws, confidentiality procedures and licensing arrangements to protect our intellectual property rights. There can be no assurance these protections will be available in all cases or will be adequate to prevent our competitors from copying, reverse engineering or otherwise obtaining and using our technology, proprietary rights or products. For example, the laws of certain countries in which our products are manufactured or licensed do not protect our proprietary rights to the same extent as the laws of the United States. In addition, third parties may seek to challenge, invalidate or circumvent our patents, trademarks, copyrights and trade secrets, or applications for any of the foregoing. There can be no assurance that our competitors will not independently develop technologies that are substantially equivalent or superior to our technology or design around our proprietary rights. In each case, our ability to compete could be significantly impaired. To prevent substantial unauthorized use of our intellectual property rights, it may be necessary to prosecute actions for infringement and/or misappropriation of our proprietary rights against third parties. Any such action could result in significant costs and diversion of our resources and management's attention, and there can be no assurance we will be successful in such action. Furthermore, many of our current and potential competitors have the ability to dedicate substantially greater resources to enforce their intellectual property rights than we do. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property.

Claims by others that we infringe their intellectual property rights could harm our business.

Our industry is characterized by vigorous enforcement and pursuit of intellectual property rights, which has resulted in protracted and expensive litigation for many companies. Third parties may in the future assert claims of infringement of intellectual property rights against us or against our customers or channel partners for which we may be liable. As the number of products and competitors in our market increases and overlaps occur, infringement claims may increase.

Intellectual property claims against us, and any resulting lawsuits, may result in our incurring significant expenses and could subject us to significant liability for damages and invalidate what we currently believe are our proprietary rights. Our involvement in any patent dispute or other intellectual property dispute or action to protect trade secrets and know-how could have a material adverse effect on our business. Adverse determinations in any litigation could subject us to significant liabilities to third parties, require us to seek licenses from third parties and prevent us from manufacturing and selling our products. Any of these situations could have a material adverse effect on our business.

These claims, regardless of their merits or outcome, would likely be time consuming and expensive to resolve and could divert management's time and attention.

We are generally obligated to indemnify our channel partners and end-customers for certain expenses and liabilities resulting from intellectual property infringement claims regarding our products, which could force us to incur substantial costs.

We have agreed, and expect to continue to agree, to indemnify our channel partners and end-customers for certain intellectual property infringement claims regarding our products. As a result, in the case of infringement claims against these channel partners and end-customers, we could be required to indemnify them for losses resulting from such claims or to refund amounts they have paid to us. Our channel partners and other end-customers in the future may seek indemnification from us in connection with infringement claims brought against them. We will evaluate each such request on a case-by-case basis, and we may not succeed in refuting all such claims. If a channel partner or end-customer elects to invest resources in enforcing a claim for indemnification against us, we could incur significant costs disputing it. If we do not succeed in disputing it, we could face substantial liability.

Risks Related to Data Privacy

Because we collect, process, use and store information about individuals, including our customers' and our own employees, this creates data privacy compliance risks that could result in additional cost and liability to us.

In the normal course of our business, we collect, process, use and disclose information about individuals. Many federal, state and foreign governmental bodies and agencies have adopted, or are considering adopting, laws and regulations that impose limits on the collection, processing, use, disclosure and security of information about individuals. In some cases, such laws and regulations can be enforced by private parties in addition to government entities. In addition, privacy advocacy and industry groups may propose new and different self-regulatory standards that either legally or contractually apply to us. These laws, regulations, and standards are complex and currently evolving, not uniform and likely to remain uncertain for the foreseeable future.

In the United States, data privacy laws and regulations are promulgated at the federal and state level, some of which are enforced by the Federal Trade Commission (FTC). There are also laws regulating the use of personal information for direct marketing purposes, including the Controlling the Assault of Non-Solicited Pornography and Marketing Act of 2003, which establishes specific requirements for commercial email messages, and the Telephone Consumer Protection Act, and the Telemarketing Sales Rule as interpreted and implemented by the FCC and United States courts, or TCPA, which imposes significant restrictions on the use of telephone calls and text messages to residential and mobile telephone numbers. At the state level, California enacted legislation, the California Consumer Privacy Act of 2018, or CCPA, which provides new data privacy rights for California consumers and the California Privacy Rights Act, or CPRA, which took effect on January 1, 2023 The CPRA modifies the CCPA by providing significant new data privacy rights. The enactment of the CCPA is prompting a wave of similar legislative developments in other states in the United States, which has created the potential for a patchwork of overlapping but different state laws. Since the CCPA went into effect, general privacy statutes that share similarities with the CCPA are now in effect and enforceable in Virginia, Colorado, Connecticut, and Utah, and will soon be enforceable in several other states as well. Many other states are also currently reviewing or proposing the need for greater regulation of the collection, sharing, use and other processing of information related to individuals for marketing purposes or otherwise, and there remains increased interest at the federal level.

Foreign data protection laws, including the EU General Data Protection Regulation 2016/679, (GDPR) and the U.K. data protection regime consisting primarily of the UK General Data Protection Regulation and the UK Data Protection Act 2018, or the UK GDPR, may also apply to other personal information obtained outside of the United States. Both the GDPR and the UK GDPR impose stringent requirements for entities processing personal information, including specific requirements regarding transfers of data outside of the European Economic Area (EEA), and restrictions regarding the use of cookies and other e-marketing activities. In addition, there are other existing and proposed European laws and regulations regarding ePrivacy, that apply in addition to the GDPR and UK GDPR, to cookies and similar tracking technologies, electronic communications and marketing, These and other recent legal developments in Europe have created complexity and uncertainty regarding these laws, the sufficiency of certain transfer mechanisms and how to comply.

In addition to the EU, Asia has also the addition of data privacy legislation including China, Hong Kong, Japan, Singapore, and South Korea. Although we are continuing to take steps to comply with these and future laws and regulations, the scope of many of the requirements remains unclear, can be subject to significant change or interpretive or enforcement application, and may be inconsistent from one jurisdiction to another, and regulatory guidance on several topics is still forthcoming. Therefore, we cannot assure you that such steps will be sufficient. Compliance with current and future laws and regulations may require changes to our collection, use, transfer, disclosure or other processing of information about individuals and systems, and may thereby increase compliance costs. If we are unsuccessful, whether actual or perceived, in our efforts to comply with these and future laws and regulations, we may incur substantial additional costs in compliance, reputational harm, affect the manner in which we provide our services, including the geographies we service, and be subject to complaints and/or regulatory investigations (including orders to cease or change our processing of personal information), significant monetary liability, fines, penalties, regulatory enforcement, individual or class action lawsuits, public criticism, loss of customers, loss of goodwill or other additional liabilities, such as claims by industry groups or other third parties, which may have a material adverse effect on our business, operating results and financial condition.

Risks Related to Our International Operations

We are subject to risks associated with international geopolitical and military conflicts.

Our business has been impacted and may continue to be impacted by geopolitical conditions such as a resultant international trade wars (including between the United States and China), the military conflict in Israel, the Russia-Ukraine conflict, and increased political tensions with or related to Russia, Europe, the Middle East and Asia. Currently, significant uncertainty surrounds the future trade relationships among the United States, China, and Russia. Polices made by the U.S. government and policies made by other countries (such as China and Russia or their allies) may make significant changes in trade policies that could negatively affect our business.
Global economic conditions and political tensions also have the ability to cause business disruptions. For example, sanctions remain imposed on trade with Russia and Belarus because of the war between Russia and Ukraine which has the potential to disrupt the supply of raw materials. Political tensions between China and western governments related to China and Taiwan, political unrest, tensions, and uncertainty in the Middle East, and global and regional, terrorism or other geopolitical events could have a range of negative impacts for the global economy. The price of oil which could impact transportation costs, raw materials supply chain, and the impact on central banks globally increasing interest rates significantly in an effort to combat inflation which has heightened concerns of a worsening global economic environment in the world. These situations could all lead to potential adverse impacts on a wide range of businesses and could disrupt supply chains and impact the businesses of our vendors and customers in ways that could impact our sales.

Our international sales and operations subject us to additional risks that can adversely affect our operating results and financial condition.

For the year ended December 31, 2023 approximately 39% of our products, based on sales, are outside of North America, and we are continuing to expand our international operations as part of our growth strategy. We have limited sales personnel and sales and support operations in the United States, Asia, and Europe. In addition, we anticipate further expansion of our global presence and extending our salesforce reach internationally. Our ability to convince customers to expand their use of our antenna products is directly correlated to our direct engagement with our end-customers and our channel partners. To the extent we are unable to engage with non-U.S. customers effectively with our limited sales force capacity, we may be unable to grow sales to existing customers.

Our international operations subject us to a variety of risks and challenges, including: increased management, travel, infrastructure and legal compliance costs associated with having multiple international operations; reliance on channel partners; increased financial accounting and reporting burdens and complexities; compliance with foreign laws and regulations; compliance with U.S. laws and regulations for foreign operations; and reduced protection for intellectual property rights in some countries and practical difficulties of enforcing rights abroad. Any of these risks could adversely affect our international operations, reduce our international sales or increase our operating costs, adversely affecting our business, operating results and financial condition and growth prospects.

In addition, we are subject to risks related to regulation of exports, reexports and transfers of products, software or technology regulated under United States laws and regulations. From time to time, the U.S. Department of Commerce may impose licensing restrictions on certain parties with whom we conduct business, which may limit or prohibit our ability to continue these activities. For example, certain of our customers have been or are designated on the U.S. Department of Commerce's Entity List and subject to licensing requirements in connection with exports, reexports, and transfers of US-regulated items. These designations may result in the loss or temporary loss of such customers and could have a material adverse effect on our business, financial condition and results of operations and affect our international sales strategy in China and elsewhere around the world. Although we undertake to conduct our business in compliance with applicable laws and regulations and have no knowledge of any issues of noncompliance with respect to export controls, our failure to successfully comply therewith may expose us to negative legal and business consequences, including civil or criminal penalties, government investigations, and reputational harm.

We are subject to governmental export and import controls that could impair our ability to compete in international markets due to licensing requirements and subject us to liability if we are not in compliance with applicable laws.

Our products are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls. Exports of our products must be made in compliance with these laws and regulations. If we violate these laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including the possible loss of export or import privileges, fines, which may be imposed on us and responsible employees or managers, and, in extreme cases, the incarceration of responsible employees or managers. In addition, if our channel partners, agents or consultants fail to obtain appropriate import, export or re-export licenses or authorizations, we may also be adversely affected through reputational harm and penalties. Obtaining the necessary authorizations, including any required license, for a particular sale may be time-consuming, is not guaranteed and may result in the delay or loss of sales opportunities. Changes in our products or changes in applicable export or import laws and regulations may also create delays in the introduction and sale of our products in international markets, prevent our end-customers with international operations from deploying our products or, in some cases, prevent the export or import of our products to certain countries, governments or persons altogether. Any change in export or import laws and regulations, shift in the enforcement or scope of existing laws and regulations, or change in the countries or territories, governments, persons or technologies targeted by such laws and regulations, could also result in decreased use of our products, or in our decreased ability to export or sell our products to existing or potential end-customers with international operations. Any decreased use of our products or limitation on our ability to export or sell our products would likely adversely affect our business, financial condition and operating results.

Furthermore, U.S. export control laws and economic sanctions prohibit the provision of certain products and services to countries and territories, governments, and persons targeted by U.S. sanctions. U.S. sanctions that have been or may be imposed, including as a result of military conflicts in other countries may impact our ability to sell our products within regions covered by such sanctions or with or involving targeted persons. Despite our compliance efforts and activities, we cannot assure compliance by our employees or representatives for which we may be held responsible. If we fail to comply with export and import regulations and such economic sanctions, penalties could be imposed, including, for example, fines and/or denial of certain export privileges. These export and import controls and economic sanctions could also adversely affect our manufacturers, suppliers and customers.

We are subject to risks generally associated with having a global supply chain, including certain laws and regulations related to forced labor and human rights. In June 2022, the U.S. Uyghur Forced Labor Prevention Act (UFLPA) went into effect, which imposes a rebuttable presumption that goods produced in the Xinjiang Uyghur Autonomous Region of China or involving certain Chinese entities were produced using forced labor and prohibits importation of such goods into the United States absent clear and convincing evidence proving otherwise. UFLPA or other U.S. human rights trade restrictions could affect the sourcing and availability of products, lead to our products being held for inspection by CBP and delayed or rejected for entry into the United States, result in other supply chain disruptions, or cause us to be subject to penalties, fines or sanctions. In the future, these human rights-related trade restrictions may expand in the United States or extend beyond the United States. In September 2022, the European Union announced a similar proposal targeting goods within Europe created with forced labor, without specifying particular countries or sectors. The EU proposal, if passed and implemented, could similarly impact our supply chain. Even if we were not subject to penalties, fines or sanctions or supply chain disruption under these restrictions, if products we source are linked in any way to forced labor, our reputation could be harmed.

On October 7, 2022, the Bureau of Industry and Security issued new export controls related to the Chinese semiconductor manufacturing, advanced computing, and supercomputer industries. The new export controls impose broad end-use and other restrictions on facilities in China that develop or produce semiconductor chips or manufacturing equipment, may impact our ability to license or support our products to entities in or doing business with certain advanced AI or “supercomputer” design companies, foundries and manufacturers of assemblies and components in China. We are still evaluating these complex new rules and are unable to quantitatively estimate any impacts at this time, but such restrictions, and any subsequent restrictions, may have an adverse effect on our business, results of operations, or financial condition. Bureau of Industry and Security furthered restrictions on the export of certain advanced computing chips and manufacturing technology to China, focused on end-user with military, data center, or artificial intelligence applications. These export control changes of certain integrated circuits are now subject to export licensing and export control restrictions for export or reexport to China and certain other countries. Furthermore, increased restrictions on China exports may lead to regulatory retaliation by the Chinese government and possibly further escalate geopolitical tensions, and any such scenarios may adversely impact our business. The prospect of future export controls that are implemented in a similar manner may continue to have an ongoing impact on our business, results of operation, or financial conditions.

Changes to United States tax, tariff and import/export regulations may have a negative effect on global economic conditions, financial markets and our business.

There have been significant changes and proposed changes to United States trade policies, treaties, tariffs and taxes, including trade policies and tariffs regarding China, Russia, eastern Europe, the middle east, and Asia. For example, the United States has imposed supplemental tariffs of up to 25% on certain imports from China, as well as tariffs on steel and aluminum products imported from various other countries. The United States may maintain or increase these tariffs or impose new ones. In response, China and other countries have imposed or proposed additional tariffs on certain exports from the United States, and it is unclear what future actions countries will or will not take with respect to trade policies, treaties, and tariffs. We do a significant amount of business in China, including dealing with Chinese suppliers and customers, for the products that use imported components that are covered under these policies. We have engaged new CMs outside of China for additional supply chain diversity as well as an option of supply of components and assemblies for our wireless solutions that can be imported to the United States without the supplemental tariff. However, these contribute to significant uncertainty about the future relationship between the United States, China, and Taiwan as well as other countries, including with respect to the trade policies, treaties, government regulations and tariffs that could apply to trade with those countries. These developments, or the perception that any of them could occur, may have a material adverse effect on global economic conditions and the stability of global financial markets, and may significantly reduce global trade and, in particular, trade between these countries and the United States. Any of these factors could depress economic activity and restrict our access to suppliers or customers and have a material adverse effect on our business, financial condition and results of operations and affect our strategy in China and elsewhere around the world.

New regulations or standards or changes in existing regulations or standards in the United States or internationally related to our products or our end-customer's products may result in unanticipated costs or liabilities, which could have a material adverse effect on our business, operating results and future sales, and could place additional burdens on the operations of our business.

Our products and our end-customers' products are subject to governmental regulations regarding radio frequency devices in many jurisdictions. To achieve and maintain market acceptance, our products, or our end-customers' products must continue to comply with these regulations and many industry standards designed to prevent interference with other radio services and to limit human exposure to harmful radiation. In the United States, our end-customers' products and our products (in cases where we provide devices that are end-device certified) must comply with such regulations issued by the Federal Communications Commission (FCC) before they can be marketed or sold, or imported into, the United States, and may also be required to conform to industry standards defined by industry associations or organizations, such as Underwriters Laboratories, for commercial acceptance. We and our end-customers must also comply with similar international regulations and standards.

As these regulations and standards evolve, and if new regulations or standards are implemented, we may have to modify or redesign our products or our end-customers may have to modify their products, which could increase costs. The failure of our products or their products to comply, or cause delays in compliance, with the existing and evolving industry regulations and standards could prevent or delay introduction of our products or our antennas used in third-party products, which could harm our business. End-customer uncertainty regarding future policies may also affect demand for communications products, including our products. Moreover, channel partners or customers may require us, or we may otherwise deem it necessary or advisable, to alter our products to address actual or anticipated changes in the regulatory environment. Our inability to alter our products to address these requirements and any regulatory changes may have a material adverse effect on our business, operating results and financial condition.

We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-bribery laws.

We operate directly and indirectly in several foreign countries and are subject to anti-bribery laws in the jurisdiction in which we operate. The U.S. Foreign Corrupt Practices Act, or FCPA, and similar anti-bribery laws generally prohibit companies and their intermediaries from making improper payments to foreign government officials for the purpose of obtaining or retaining business or an unfair business advantage; many anti-bribery laws also prohibit commercial bribery. In addition, we are subject to the FCPA's recordkeeping and internal controls requirements. Practices in the local business communities of many countries in which we do business have a heightened level of corruption. As part of our business, we may have direct or indirect sales to, and other interactions with, non-U.S. government agencies. Our policies mandate compliance with these anti-bribery laws and we have established policies and procedures reasonably designed to promote compliance with applicable anti-bribery law requirements; however, we cannot assure that our policies and procedures will protect us from violations committed by individual employees, agents or intermediaries. Allegations or violations of anti-bribery law violations could result in costly investigations, criminal or civil penalties or other sanctions that could have a material adverse effect on our business and reputation.

Risks Related to Our Common Stock

The price of our common stock may be volatile.

The trading price of our common stock may be volatile and may fluctuate substantially in response to various factors. This may be especially true for companies with a small public float. As a result of this volatility, investors may not be able to sell their common stock at or above the price at which they paid. The trading price of our common stock depends on several factors, including those described in this "Risk Factors" section and elsewhere in this annual report, including:

- price and volume fluctuations in the overall stock market from time to time;
- volatility in the market prices and trading volumes of technology stocks;
- changes in operating performance and stock market valuations of other technology companies generally, or those in our industry in particular;
- sales of shares of our common stock by us or our stockholders;
- failure of financial analysts to maintain coverage of us, changes in financial estimates by any analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- the financial projections we may provide to the public, any changes in those projections or our failure to meet those projections;
- announcements by us or our competitors of new products or new or terminated significant contracts, commercial relationships or capital commitments;
- the development and sustainability of an active trading market for our common stock;
- the public's reaction to our press releases, other public announcements and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- actual or anticipated changes in our operating results or fluctuations in our operating results;
- actual or anticipated developments in our business or our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry or both or investigations by regulators into our operations or those of our competitors;
- developments or disputes concerning our intellectual property or other proprietary rights;
- announced or completed acquisitions of businesses or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- any major change in our management;
- general economic conditions and slow or negative growth of our markets; and
- other events or factors, including those resulting from outbreaks of contagious disease, inflation and interest rate changes, financial institution instability, wars, such as the war between Russia and Ukraine, and the conflict related to China and Taiwan, political unrest, tensions and uncertainty in the Middle East, and global and regional, terrorism or other geopolitical events.

In addition, the stock market in general, and the market for technology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry factors, as well as general economic, political and market conditions such as recessions or interest rate changes, may seriously affect the market price of our common stock, regardless of our actual operating performance. The realization of any of the above risks or any of a broad range of other risks, including those described in this "Risk Factors" section and elsewhere in this annual report on Form 10-K could have a dramatic and material adverse impact on the market price for our common stock.

In addition, in the past, following periods of volatility in the overall market and the market prices of particular companies' securities, securities class action litigations have often been instituted against these companies. Litigation of this type, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources. Any adverse determination in any such litigation or any amounts paid to settle any such actual or threatened litigation could require that we make significant payments.

If securities or industry analysts issue an adverse opinion regarding our stock our stock price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that securities or industry analysts may publish about us, our business, our market or our competitors. We currently have limited research coverage by securities and industry analysts. If any of the analysts who may cover us change their recommendation regarding our common stock adversely, or provide more favorable relative recommendations about our competitors, the trading price of our common stock would likely decline. If any analyst who may cover us were to cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause the trading price of our common stock or trading volume to decline.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change of control or changes in our management. Some of these provisions:

- authorize our board of directors to issue, without further action by the stockholders, up to 10,000,000 shares of undesignated preferred stock and up to 200,000,000 shares of authorized common stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the Chairman, the Chief Executive Officer or the President;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms;
- provide that our directors may be removed only for cause; and
- provide that vacancies on our board of directors may, except as otherwise required by law, be filled only by a majority of directors then in office, even if less than a quorum.

In addition, we are subject to the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. Furthermore, our amended and restated certificate of incorporation specifies that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for most legal actions involving actions brought against us by stockholders. We believe this provision benefits us by providing increased consistency in the application of Delaware law by chancellors particularly experienced in resolving corporate disputes, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. However, the provision may have the effect of discouraging lawsuits against our directors and officers. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any applicable action brought against us, a court could find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in such action.

These anti-takeover provisions and other provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing or cause us to take other corporate actions you desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

We have never paid cash dividends on our common stock, and we do not anticipate paying cash dividends in the foreseeable future.

We have never declared or paid any cash dividends on our common stock and do not intend to pay any cash dividends in the foreseeable future. We currently intend to retain any future earnings to fund the growth of our business. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant and subject to the restrictions contained in any loan or financing instruments. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for the foreseeable future.

We are a "smaller reporting company," and if we take advantage of certain exemptions from disclosure requirements available to smaller reporting companies, this could make our stock less attractive to investors and may make it more difficult to compare our performance with other public companies.

We are a "smaller reporting company" as defined in Item 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, reduced executive compensation disclosures and providing only two years of audited financial statements. We will remain a smaller reporting company until the last day of the fiscal year in which (1) the market value of our common stock held by non-affiliates equals or exceeds $250 million as of the prior June 30, or (2) our annual revenue equals or exceeds $100 million during such completed fiscal year and the market value of our common stock held by non-affiliates equals or exceeds $700 million as of the prior June 30. To the extent we take advantage of such reduced disclosure obligations, our stockholders may not have access to certain information they may deem important. It may also make comparison of our financial statements with other public companies difficult or impossible. If investors find our common stock less attractive as a result of our reliance on these exemptions, the trading prices of our common stock may be lower than they otherwise would be, there may be a less active trading market for our common stock and the trading prices of our common stock may be more volatile.

We incur significant costs as a result of operating as a public company, and our management is required to devote substantial time to comply with the laws and regulations affecting public companies, particularly after we are no longer a smaller reporting company or a non-accelerated filer.

As a public company, particularly after we cease to qualify as a smaller reporting company or non-accelerated filer, we incur significant legal, accounting and other expenses that we did not incur as a private company, including costs associated with public company reporting and corporate governance requirements, to comply with the rules and regulations imposed by the Sarbanes-Oxley Act and the Dodd-Frank Act, as well as rules implemented by the SEC and Nasdaq. Our management and other personnel need to devote a substantial amount of time to these compliance initiatives and our legal and accounting compliance costs will increase. It is likely that we will need to hire additional staff in the areas of investor relations, legal and accounting. These new rules and regulations may make it more difficult and expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified individuals to serve on our board of directors or as executive officers. We are evaluating and monitoring developments regarding these rules, and we cannot predict or estimate the amount of additional costs we may incur or the timing of such costs.

For example, the Sarbanes-Oxley Act requires, among other things, that we maintain effective internal controls over financial reporting and disclosure controls and procedures. In particular, as a public company, we are required to perform system and process evaluations and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. As described above, as long as we are considered a non-accelerated filer, we will not need to comply with the auditor attestation provisions of Section 404. Our testing, or the subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal control over financial reporting that are deemed to be material weaknesses. Our compliance with Section 404 will require that we incur substantial accounting expense and management time on compliance-related issues. Moreover, if we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, we could lose investor confidence in the accuracy and completeness of our financial reports, which could cause our stock price to decline.

Until December 31, 2021, we qualified for further exemptions and reduced disclosure requirements as an “emerging growth company,” as defined in the JOBS Act. Since we are no longer an emerging growth company, we are no longer exempt from certain requirements, including, without limitation, holding non-binding stockholder votes on executive compensation arrangements and compliance with new or revised accounting standards and audit requirements. We expect to incur additional expenses and devote increased management effort toward ensuring compliance with these requirements, as well as when the available exemptions for a smaller reporting company or a non-accelerated filer are no longer available to us. We cannot predict or estimate the amount of additional costs we may incur as a result of becoming a public company or the timing of such costs.

General Risk Factors

Litigation or legal proceedings could expose us to significant liabilities and damage our reputation.

We may become party to litigation claims and legal proceedings. Litigation involves significant risks, uncertainties and costs, including distraction of management attention away from our current business operations. We evaluate litigation claims and legal proceedings to assess the likelihood of unfavorable outcomes and to estimate, if possible, the amount of potential losses. We caution you that actual outcomes or losses may differ materially from those envisioned by our current estimates. Our policies and procedures require strict compliance by our employees and agents with all United States and local laws and regulations applicable to our business operations, including those prohibiting improper payments to government officials. Nonetheless, there can be no assurance that our policies and procedures will always ensure full compliance by our employees and agents with all applicable legal requirements. Improper conduct by our employees or agents could damage our reputation in the United States and internationally or lead to litigation or legal proceedings that could result in civil or criminal penalties, including substantial monetary fines, as well as disgorgement of profits.

A failure in our information technology systems could negatively impact our business.

We rely on information technology to process, transmit, and store electronic and financial information and information about individuals, to manage a variety of business processes and activities, to maintain the financial accuracy of our records, and to comply with regulatory, legal and tax requirements. We also depend on our information technology infrastructure for digital marketing and sales activities and for electronic communications among our locations, personnel, customers, and suppliers around the world. We own and manage some of these information technology systems but also rely on third parties for a range of information technology systems and related products and services, including but not limited to cloud computing services. Third party products including cloud computing services and hardware come with risks that Airgain continuously monitors to ensure industry best practices are in use and consistent with replacement cycles to mitigate these risks. These information technology systems are susceptible to damage, disruptions, or shutdowns due to failures during the process of upgrading or replacing software, databases or components thereof, power outages, hardware failures, computer viruses, cyber-attacks, telecommunication failures, defects, errors, catastrophic events, terrorism or war, such as the conflict between Russia and Ukraine, which according to United States government sources and others has resulted in a heightened risk of cyberattacks against companies like ours. If our information technology systems suffer severe damage, disruption, or shutdown and our business continuity plans do not effectively resolve the issues in a timely manner, our product sales, financial condition, and results of operations may be materially affected, and we could experience delays in reporting our financial results.

Information technology security threats are increasing in frequency, persistence, intensity and sophistication. We and our third party service providers may also experience information technology security threats that may remain undetected for an extended period. Any perceived or actual compromise, breach, or misuse of our or our third party service providers’ systems or information could cause us to incur damage to our reputation, and expose us to a risk of loss or litigation (including by our customers) and possible monetary liability, affect the manner in which we provide our services, and subject us to complaints and/or regulatory investigations, fines, penalties, regulatory enforcement, individual or class action lawsuits, public criticism, loss of customers, loss of goodwill or other additional liabilities, and could adversely affect our business, results of operations, financial condition and prospects. We may also incur significant costs to notify, in particular, affected individuals, maintain our security precautions and/or to correct problems caused by the compromise, breach or misuse of our systems or information. The costs of any compromise, breach or misuse of our systems or information could exceed our available insurance coverage, or could result in denial of coverage as to any specific claim, or a change or cessation in our insurance policies and coverages, including premium increases or the imposition of large deductible requirements. And any failure by our third party information technology providers, or any other entity in our collective supply chain, to prevent or mitigate security breaches or improper access to, or use, acquisition, disclosure, alteration, or destruction of, systems or information could have similar adverse consequences for us. To date, we have seen no material impact on our business or operations from these information technology security threats. Any future significant compromise, breach, or misuse of our data security could result in significant costs and damage to our reputation, and could materially adversely affect our business, results of operations, and financial condition. The ever-evolving threats mean us, and our third-party service providers must continually evaluate and adapt our respective systems and processes and overall security environment, as well as those of any companies we acquire. There is no guarantee that these measures will be adequate to safeguard against all data security compromises, breaches, or misuses.

Our business is subject to the risks of earthquakes, fire, floods and other natural catastrophic events.

Our corporate headquarters are located in Southern California, some of our CMs are located in eastern Asia, both regions known for seismic activity. A significant natural disaster, such as an earthquake, a fire or a flood, occurring near our headquarters, or near the facilities of our CMs, could have a material adverse impact on our business, operating results and financial condition.

Changes in tax law may materially adversely affect our financial condition, results of operations and cash flows.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, or interpreted, changed, modified or applied adversely to us, any of which could adversely affect our business operations and financial performance. The likelihood of these changes being enacted or implemented is unclear. We are currently unable to predict whether such changes will occur. If such changes are enacted or implemented, we are currently unable to predict the ultimate impact on our business. We urge our investors to consult with their legal and tax advisors with respect to any changes in tax law and the potential tax consequences of investing in our common stock.

Our business, operating results and growth rates may be adversely affected by current or future unfavorable economic and market conditions and adverse developments with respect to financial institutions and associated liquidity risk.

Our business depends on the economic health and general willingness of our current and prospective end-customers to make those capital commitments necessary to purchase our products. If the conditions in the U.S. and global economies become uncertain or volatile, or if they deteriorate, including as a result of the current or anticipated impact of military conflict, including the war between Russia and Ukraine, and the conflict related to China and Taiwan, political unrest, tensions and uncertainty in the Middle East, and global and regional, terrorism or other geopolitical events, our business, operating results and financial condition may be materially adversely affected. Economic weakness, end-customer financial difficulties, inflation and increases in interest rates, limited availability of credit, liquidity shortages and constrained capital spending have at times in the past resulted, and may in the future result, in challenging and delayed sales cycles, slower adoption of new technologies and increased price competition, and could negatively affect our ability to forecast future periods, which could result in an inability to satisfy demand for our products and a loss of market share.

In addition, if interest rates rise or foreign exchange rates weaken for our international customers, overall demand for our products and services could decline and related capital spending may be reduced. Furthermore, any increase in worldwide commodity prices may result in higher component prices for us and increased shipping costs, both of which may negatively affect our business, operating results and financial condition.

In addition, the closures in 2023 of financial institutions and their placement into receivership with the FDIC created bank-specific and broader financial institution liquidity risk and concerns. Future adverse developments with respect to specific financial institutions or the broader financial services industry may lead to market-wide liquidity shortages, impair the ability of companies to access near-term working capital needs, and create additional market and economic uncertainty. There can be no assurance that future credit and financial market instability and a deterioration in confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, liquidity shortages, volatile business environment or continued unpredictable and unstable market conditions. If the equity and credit markets deteriorate, or if adverse developments are experienced by financial institutions, it may cause short-term liquidity risk and also make any necessary debt or equity financing more difficult, more costly, more onerous with respect to financial and operating covenants and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and stock price and could require us to alter our operating plans. In addition, there is a risk that one or more of our current service providers, financial institutions, manufacturers, suppliers, customers and other partners may be adversely affected by the foregoing risks, which could directly affect our ability to attain our operating goals on schedule and on budget.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 1C. CYBERSECURITY

Cybersecurity Risk Management and Strategy

While we are in the process of fully implementing a comprehensive cybersecurity risk management program, we have developed and implemented a cybersecurity risk management program intended to protect the confidentiality, integrity, and availability of our critical systems and information.

Our cybersecurity risk management program not only fortifies our current defense but also serve as the building blocks for adopting an internationally recognized IT standards framework, such as the National Institute of Standards and Technology Cybersecurity Framework (NIST CSF) or the International Organization for Standardization (ISO) 27001. This does not imply that we meet any particular technical standards, specifications, or requirements, only that we intend to use the NIST CSF or ISO 27001 as a guide to help us identify, assess, and manage cybersecurity risks relevant to our business.]

Our cybersecurity risk management program is integrated into our overall enterprise risk management program, and shares common methodologies, reporting channels and governance processes that apply across the enterprise risk management program to other legal, compliance, strategic, operational, and financial risk areas.

Our cybersecurity risk management program includes:

- risk assessments of our risk capacity, conducting pressure and gap analyses, and formalizing our risk tolerance;
- a security team principally responsible for managing (1) our cybersecurity risk assessment processes, (2) our security controls, and (3) our response to cybersecurity incidents;
- the use of external service providers, where appropriate, to assess, test or otherwise assist with aspects of our security controls;
- cybersecurity awareness training of our employees, incident response personnel, and senior management; and
- a third-party risk management process for service providers, suppliers, and vendors, in which we assess their processes, controls, and monitor cybersecurity enhancements to safeguard our interests and mitigate potential risks.

We are building on our current program towards a more comprehensive cybersecurity risk management program. Our roadmap for the future is centered on the maturation of our cybersecurity risk management program to align to international IT frameworks, such as NIST and ISO 27001 that will strengthen our defenses, enhance our threat detection capabilities, and ensure the confidentiality, integrity, and availability of our critical systems and data.

We have not identified risks from known cybersecurity threats, including as a result of any prior cybersecurity incidents, that have materially affected or are reasonably likely to materially affect us, including our operations, business strategy, results of operations, or financial condition.

Cybersecurity Governance

Our board of directors considers cybersecurity risk as part of its risk oversight function and has delegated to the audit committee of our board of directors (Audit Committee) oversight of cybersecurity and other information technology risks. The Audit Committee oversees management’s implementation of our cybersecurity risk management program.

Management updates the Audit Committee, as necessary, regarding any material cybersecurity incidents, as well as any incidents with lesser impact potential.

Our management team, including CTO and IT Manager, is responsible for assessing and managing our material risks from cybersecurity threats. The team has primary responsibility for our overall cybersecurity risk management program and supervises both our internal cybersecurity personnel and our retained external cybersecurity consultants. Our management team has several years of experience and have been trained for various roles in information technology and cybersecurity at numerous technology companies.

Our management team supervises efforts to prevent, detect, mitigate, and remediate cybersecurity risks and incidents through various means, which may include briefings from internal security personnel; threat intelligence and other information obtained from governmental, public or private sources, including external consultants engaged by us; and alerts and reports produced by security tools deployed in the IT environment.

ITEM 2. PROPERTIES

Our corporate headquarters occupy approximately 10,300 square feet in San Diego, California, under a lease that expires in November 2025. Our NimbeLink facility, located in Plymouth, Minnesota, occupies 9,000 square feet under a lease that expires in July 2025. We lease a 5,200 square foot research, development and test facility in Scottsdale, Arizona. We also lease a 2,000 square foot property in St. Cloud, Florida, and a 3,500 square foot property in Jonestown, Texas, which are used for testing services.

We lease an office space in four locations outside of the United States including leases in Shenzhen, China; Jiangsu Province, China; Shulin City, Taiwan; and Cambridge, United Kingdom.

We believe our facilities are suitable and sufficient to meet our current operating needs.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we may be a party to legal proceedings and subject to claims incident in the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we believe that the final outcome of these matters will not have a material adverse effect on our financial condition or business. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors.

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

Our common stock is listed on the Nasdaq Capital Market under the symbol “AIRG”.

Holders of Common Stock

As of February 27, 2023, there were 10,504,597 shares of our common stock outstanding held by approximately 30 holders of record of our common stock. This number was derived from our shareholder records and does not include beneficial owners of our common stock whose shares are held in the name of various dealers, clearing agencies, banks, brokers and other fiduciaries.

Dividend Policy

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

Equity Compensation Plan Information

See Part III, Item 12, “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters” for information regarding securities authorized for issuance under equity compensation plans.

Unregistered Sales of Equity Securities

None.

Issuer Repurchases of Equity Securities

None.

ITEM 6. [Reserved]

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

You should carefully consider the following risk factors, together with the other information contained in this annual report on Form 10-K, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations," before deciding to purchase or sell shares of our common stock. We cannot assure you that any of the events discussed in the risk factors below will not occur. These risks could have a material and adverse impact on our business, results of operations, financial condition and growth prospects. If that were to happen, the trading price of our common stock could decline. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations or financial condition.

Business Overview

Airgain is a premier provider of wireless connectivity solutions, offering a range of embedded components, external antennas, and integrated systems worldwide. We streamline wireless connectivity across devices and markets, with a focus on solving complex connectivity challenges, expediting time to market, and optimizing wireless signals. Our mission is to connect the world through optimized, integrated wireless solutions. Our product portfolio focuses on three key markets: enterprise, consumer, and automotive.

Our current enterprise products include embedded cellular modems, antennas for access points and Internet of Things (IoT) applications, and asset trackers. We expect to expand our product offering with fixed wireless access solutions and Smart Network Controlled Cellular Repeaters (Smart NCRs). Our consumer products include embedded antennas for consumer access points, wireless gateways, smart home devices and fixed wireless access devices. Our current automotive products include aftermarket antennas that are typically connected to third-party cellular and Wi-Fi-enabled routers, digital video evidence devices, and telematics gateways. We also recently launched a second generation AirgainConnect® Fleet system solution – a low profile, roof-mounted 5G vehicle gateway, combining a cellular modem, antennas, and additional features into a single device.

We have a rich history of providing radio frequency (RF) expertise, services, and solutions to mobile operators and major OEMs. With the addition of NimbeLink products in 2021, we expanded our capabilities to include embedded cellular modems, asset trackers and custom IoT systems. We are leveraging our RF and systems experience, and our Mobile Network Operator (MNO) and Multiple Service Operator (MSO) relationships to deliver new and differentiated products.

Core Markets

The enterprise market requires reliable wireless access across various settings, including smart cities, utilities, factories, buildings, campuses, transportation hubs, stadiums, and suburban developments. Our NimbeLink embedded modems serve numerous enterprise sectors requiring cellular connectivity such as packaging, logistics, EV charging, smart cities, smart buildings, agriculture, and asset tracking. These NimbeLink cellular modems, which are both patented and end-device certified, minimize the need for additional carrier certifications. Our asset trackers are deployed across transportation, supply chain, cold chain, and other specialized applications. Our asset tracking solution utilizes a cellular backbone with Wi-Fi and GPS triangulation, along with various sensors like temperature, motion, distance, tilt, and humidity to monitor asset location and condition in various environments. In addition to hardware, our asset tracking offering includes a recurring revenue component, our subscription-based NLink cloud-based device enablement platform, which allows for deployment and integration with enterprise systems via open APIs. Our custom products feature joint engineering collaboration with strategic customers to develop IIoT for specific applications while helping them reduce their time to market. Our enterprise IoT and M2M antennas are extensively deployed in diverse systems, devices, and applications, including access points, gateways, fixed wireless access devices and utility meters. In 2023, we unveiled a new line of Fixed Wireless Access products designed to address 5G connectivity challenges, reduce deployment costs and enhance customer experiences. In 2023, we also announced our Lighthouse™ smart repeaters platform designed to reduce an operator's capital expenses for extending range, while enhancing 5G coverage.

The consumer market represents a vast audience utilizing wireless-enabled devices. Our embedded antennas are deployed in various consumer applications including access points, wireless gateways, FWA devices, Wi-Fi routers and extenders, smart TVs, smart home devices, and set-top boxes. These consumer products support a variety of technologies, products and services, including LTE, 5G, Wi-Fi, Bluetooth, LPWAN and GNSS (Global Navigation Satellite System). We announced in November 2023 that Airgain was selected by a major Tier 1 MNO in North America to supply its next generation antennas for its indoor FWA devices. This selection comes amid ongoing consumer shifts away from traditional wired broadband to wireless as more major telecom providers offer broadband internet access as part of their bundled offerings. We continue to grow our relationships with MSOs and MNOs as the market evolves with both wired and wireless broadband internet offerings.

In the automotive market, our products are deployed in a wide range of vehicles in the fleet and aftermarket applications, supporting a variety of technologies that include Wi-Fi, LTE, 5G, LPWAN, GNSS, and Bluetooth. Fleet and aftermarket products in the automotive market typically consist of applications where vehicular wireless routers are paired with external antenna systems to provide connectivity to mobile assets. We offer a full line of external fleet antennas that are designed to be rugged, reliable, and flexible to meet almost any need. We design our products for performance, quality, and long product life and our antennas connect to almost any vehicular router or modem. These antennas include high-performance and low-profile versions that mount on the roof, trunk, windshield, or dashboard and are optimized for 5G, 4G, Wi-Fi, and GNSS. In January 2024 we launched our next-generation product named AirgainConnect Fleet (AC-Fleet). The AC-Fleet solution is 5G and carrier agnostic allowing for a significantly larger target market compared our first generation AC-HPUE solution.

Macroeconomic conditions

Macroeconomic conditions have continued to create demand softness industrywide, including downward pressures relating to the anticipated service provider shift from Wi-Fi 6E to Wi-Fi 7. This demand softness combined with excess inventories in our channels and those of our direct customers, drove year-over-year declines in our Enterprise, Automotive and Consumer markets. These conditions worsened in the second half of 2023 and, coupled with a delay in the completion of an Enterprise project, contributed to a material sales decline in the second half of the year compared to the first half of the year. We believe that the fourth quarter of 2023 was the trough for our business after sequential declines through the year. As we turn to 2024, we anticipate a year of gradual growth driven by recoveries in our end markets, investments in product innovations, and launches of our 5-G connectivity initiatives. We remain focused on the execution of our strategic product initiatives and operational efficiencies, as they lay out the foundation of our revenue and profitability growth when market conditions improve.

Factors Affecting Our Operating Results

We believe that our performance and future success depend upon several factors including macroeconomic and geopolitical uncertainties, epidemic diseases, impact of inflation on consumer spending, and our ability to transition from a component provider to a wireless systems provider and to develop technology leadership and expand our markets.

Our performance and future success also depend on factors such as continued investments in our growth, our ability to expand into growing addressable markets, including consumer, enterprise, and automotive, the average selling prices of our products per device, manufacturing costs and our ability to diversify the number of devices that incorporate our antenna products. Our customers are price conscious, and our operating results are affected by pricing pressure which may force us to lower prices below our established list prices. In addition, a few end-customer devices which incorporate our antenna products comprise a significant amount of our sales, and the discontinuation or modification of such devices may materially and adversely affect our sales and results of operations. Our ability to maintain or increase our sales depends on, among other things:

- new and existing end customers selecting our solutions for their wireless devices and networks;
- investments in our growth to address customer needs;
- development of our product offerings and technology solutions;
- our ability to target new end markets;
- the proliferation of Wi-Fi connected home devices and data intensive applications;
- the impact of global supply shortages on our business and that of our end customers;
- international expansion in light of continuing global tensions; and
- the ability to successfully integrate past and any future acquisitions.

In addition, inflation generally affects us by increasing our raw material and employee-related costs and other expenses. Our financial condition and results of operations may also be impacted by other factors we may not be able to control, such as uncertain global economic conditions, pandemics and epidemics, global trade disputes or political instability, as well as conflicts around the world. We do not believe that such factors had a material adverse impact on our results of operations during 2023.

While each of these areas presents significant opportunities for us, they also pose significant risks and challenges we must successfully address. We discuss many of these risks, uncertainties and other factors in greater detail in the section entitled “Risk Factors” included in Item 1A of this annual report on Form 10-K.

Our operating results historically have not been subject to significant seasonal variations. Although it is difficult to make broad generalizations, our sales tend to be lower in the first quarter of each year compared to other quarters due to the Lunar New Year. Results for any quarter may not be indicative of the results that may be achieved for the full fiscal year and these patterns may change because of general customer demand or product cycles.

Our financial highlights for 2023 include the following:

- Sales decreased by 26.2% in 2023 compared to 2022. The decrease in sales was primarily driven by excess inventory correction across all markets.
- Gross profit as a percentage of sales increased to 37.1% in 2023 compared to 36.9% in 2022. The increase was primarily due to higher automotive margins.
- Loss from operations increased by $3.8 million in 2023 compared to 2022. The increase was due to a decrease of $7.2 million in gross profit, partially offset by a decrease of $3.4 million in operating expenses.
- Our effective tax rate for each year was -1% in 2023 and in 2022.
- We ended 2023 with cash and cash equivalents and restricted cash totaling $8.0 million.

Key Components of Our Results of Operations and Financial Condition

Sales

We primarily generate revenue from the sales of our products. We recognize revenue to depict the transfer of control over promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled for those goods or services. We generally recognize product sales at the time of shipment to our customers, provided that all other revenue recognition criteria have been met. We also generate service revenue from agreements to provide design, engineering, and testing services as well as subscription revenue from the sale of data plans.

Cost of Goods Sold

The cost of goods sold reflects the cost of producing antenna, embedded modem and system solutions products that are shipped to our customers as well as costs incurred for service agreements. This primarily includes manufacturing costs of our products payable to our third-party CMs. The cost of goods sold that we generate from services and subscription revenues primarily includes personnel costs and the cost to maintain data lines.

Operating Expenses

Our operating expenses are classified into three categories: research and development, sales and marketing, general and administrative. The largest component of expense is personnel costs, which includes salaries, employee benefit costs, bonuses, and stock-based compensation. Operating expenses also include allocated overhead costs for depreciation of equipment, facilities and information technology. Allocated costs for facilities consist of amortization of leasehold improvements as well as rent and utility expenses and taxes. Operating expenses are generally recognized as incurred.

Research and Development. Research and development expenses primarily consist of personnel and project development costs. These expenses include work related to the design, development and testing of antennas, modems and system solutions. These expenses include salaries, stock-based compensation, benefits, bonuses, project development and testing, prototype material, consulting, travel, and similar costs, and depreciation and allocated costs for certain facilities. We expect research and development expenses to increase in absolute dollars in future periods as we continue to invest in the development of new solutions and markets, although our research and development expense may fluctuate as a percentage of total sales.

Sales and Marketing. Sales and marketing expenses primarily consist of personnel and facility-related costs for our sales, marketing, and business development personnel, stock-based compensation and bonuses earned by our sales personnel, and commissions earned by our third-party sales representative firms. Sales and marketing expenses also include the costs of trade shows, advertising, marketing programs, promotional materials, demonstration equipment, travel, and allocated costs for certain facilities. We expect sales and marketing expenses to fluctuate as a percentage of total sales.

General and Administrative. General and administrative expenses primarily consist of personnel and facility related costs for our executive, legal, human resource finance, and administrative personnel, including stock-based compensation, as well as legal, accounting, other professional services fees, depreciation, and other corporate expenses. We expect general and administrative expenses to fluctuate as we grow our operations.

Other (Income) Expense

Interest Income, net. Interest income consists of interest from our cash and cash equivalents offset by interest expense which consists of interest charges on credit card charges and certain vendor bills.

Other Expense. Other expense consists of the loss from disposal of property and equipment, realized foreign exchange gains or losses, and other income and expenses.

Provision for Income Taxes

Provision for income taxes consists of federal and state income taxes. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities (including the impact of available carryback and carryforward periods), projected future taxable income, and tax-planning strategies in making this assessment. It is difficult for us to project future taxable income as the timing and size of sales of our products are variable and difficult to predict. We concluded that it is not more likely than not that we will utilize our deferred tax assets other than those that are offset by reversing temporary differences.

Results of Operations

The following tables set forth our operating results for the periods presented and as a percentage of our total sales for those periods. The period-to-period comparison of financial results is not necessarily indicative of financial results to be achieved in future periods.

Statements of Operations Data (dollars in thousands)	**For the Years Ended December 31,**			
	2023	**2022**	**2023**	**2022**
Sales	$ 56,040	$ 75,895	100.0%	100.0%
Cost of goods sold	35,277	47,923	62.9	63.1
Gross profit	20,763	27,972	37.1	36.9
Operating expenses:				
Research and development	10,505	11,345	18.7	15.0
Sales and marketing	9,126	11,174	16.3	14.7
General and administrative	13,532	14,033	24.2	18.5
Total operating expenses	33,163	36,552	59.2	48.2
Loss from operations	(12,400)	(8,580)	(22.1)	(11.3)
Other income	(100)	(5)	(0.2)	0.0
Loss before income taxes	(12,300)	(8,575)	(21.9)	(11.3)
Income tax expense	128	84	0.3	0.1
Net loss	$ (12,428)	$ (8,659)	(22.2)%	(11.4)%

Comparison of the Years Ended December 31, 2023 and 2022
(all tables—dollars in thousands)

Sales	For the Years Ended December 31,			
	2023	**2022**	**$ Change**	**% Change**
Sales	$ 56,040	$ 75,895	$ (19,855)	(26.2)%

Sales for 2023 decreased $19.9 million, or 26.2% compared to 2022. Enterprise market sales decreased $7.3 million, to $27.2 million for 2023 from $34.5 million for 2022, primarily due to channel excess inventory correction impacting our IIoT products sales. Automotive market sales decreased $5.7 million to $9.9 million for 2023, from $15.6 million for 2022, driven by the discontinued HPUE product line and excess inventory correction impacting our Aftermarket antenna sales. Consumer market sales decreased $6.9 million to $18.9 million for 2023 from $25.8 million for 2022, primarily due to weaker demand, coupled with excess inventory, with cable operators customers.

Cost of Goods Sold	For the Years Ended December 31,			
	2023	**2022**	**$ Change**	**% Change**
Cost of goods sold	$ 35,277	$ 47,923	$ (12,646)	(26.4)%

Cost of goods sold for 2023 decreased $12.6 million or 26.4% compared to 2022. The decrease was due to sales decline.

Gross Profit	For the Years Ended December 31,			
	2023	**2022**	**$ Change**	**% Change**
Gross profit	$ 20,763	$ 27,972	$ (7,209)	(25.8)%
Gross profit (percentage of sales)	37.1%	36.9%		0.2%

Gross profit for 2023 decreased $7.2 million, or 25.8%, compared to 2022, driven by lower sales partially offset by a higher 2023 gross margin.

Gross profit as a percentage of sales for 2023 increased by 20 basis points compared to 2022. The increase was primarily driven by higher automotive gross margins.

Operating Expenses	For the Years Ended December 31,			
	2023	**2022**	**$ Change**	**% Change**
Research and development	$ 10,505	$ 11,345	$ (840)	(7.4)%
Sales and marketing	9,126	11,174	(2,048)	(18.3)%
General and administrative	13,532	14,033	(501)	(3.6)%
Total operating expenses	$ 33,163	$ 36,552	$ (3,389)	(9.3)%

Research and Development

Research and development expense for 2023 decreased $0.8 million or 7.4% compared to 2022. The decrease was primarily due to lower employee expenses and engineering service expenses.

Sales and Marketing

Sales and marketing expense for 2023 decreased $2.0 million or 18.3%, compared to 2022. The decrease was primarily due to lower employee expenses.

General and Administrative

General and administrative expense for 2023 decreased $0.5 million or 3.6% compared to 2022. The decrease was driven by lower employee expenses and professional services.

Other (income) expense:

	For the Years Ended December 31,			
	2023	2022	$ Change	% Change
Interest income, net	$ (109)	$ (63)	$ (46)	73.0%
Other expense	9	58	(49)	(84.5)
Total other income	$ (100)	$ (5)	$ (95)	1900.0%

Other expense for 2023 consists primarily of unfavorable foreign exchange remeasurement adjustments. Other expense for 2022 consists mainly of unfavorable foreign exchange remeasurement adjustments and loss on disposal of fixed assets.

Income Tax Expense

	For the Years Ended December 31,			
	2023	2022	$ Change	% Change
Income tax expense	$ 128	$ 84	$ 44	52.4%

Income tax expense for 2023 increased $44,000 or 52.4%, compared to 2022. The primary reason for income tax expense in a net loss position is due to the cost-plus rules in foreign jurisdictions.

statutory rate.

Liquidity and Capital Resources

We had cash and cash equivalents of $7.9 million at December 31, 2023. Prior to 2013, and for the years ended 2018, 2020, 2021, 2022 and 2023, we have incurred net losses. As a result, we have an accumulated deficit of $78.5 million at December 31, 2023.

We plan to continue to invest for long-term growth, including expanding our sales engineering and sales teams to execute on our product roadmap and further penetrate domestic and international markets. We anticipate that these investments will continue to increase in absolute dollars. We believe that our existing cash and cash equivalents balance will be sufficient to meet our working capital requirements for at least the next 12 months.

The following table presents a summary of our cash flow activity for the periods set forth below (in thousands):

	Twelve months ended December 31,	
	2023	2022
Net cash (used in) provided by operating activities	$ (3,301)	$ 4,446
Net cash used in investing activities	(346)	(750)
Net cash used in financing activities	(458)	(6,304)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	3	—
Net decrease in cash, cash equivalents and restricted cash	$ (4,102)	$ (2,608)

Net Cash (Used in) Provided by Operating Activities.

Net cash used in operating activities was $3.3 million for the year ended December 31, 2023. The decrease was primarily driven by the net loss of $12.4 million, offset by $7.3 million in non-cash expenses and a $1.8 million net decrease of operating assets and liabilities.

Net Cash Used in Investing Activities.

Net cash used in investing activities of $0.3 million for the year ended December 31, 2023 was primarily for purchases of property and equipment.

Net Cash Used in Financing Activities.

Net cash used in financing activities of $0.5 million for the year ended December 31, 2023 was primarily to pay taxes for net share settlement of restricted stock units, partially offset by proceeds from common stock issuances under the ESPP.

Employee Retention Credit

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) was signed into law providing an employee retention credit (ERC), which is a refundable tax credit against certain employment taxes on qualified wages. The Taxpayer Certainty and Disaster Tax Relief Act of 2020, the American Rescue Plan Act of 2021 and the Infrastructure Investment and Jobs Act amended the qualifications for eligible employers who could apply and extended the availability of the ERC employment taxes on qualified wages paid after December 31, 2020 through September 30, 2021. We believe that we qualify for application of the ERC on qualified wages from the second quarter of 2020 through the third quarter of 2021.

In August 2023, we applied for ERC refunds, totaling $2.5 million, net of professional fees. Pending the Internal Revenue Service's (IRS) review and determination of our eligibility, we anticipate receiving the ERC refunds within the next nine months. However, there can be no assurance we will ultimately receive the amounts we currently expect, if any, or the timeframe of any such receipt, based on IRS review or otherwise.

Liquidity and Capital Resources Assessment

As of March 6, 2024, management performed the annual assessment of the Company's ability to meet its obligations as they become due within one year based on relevant conditions and events that are known and reasonably knowable. Following ASC 205-40 guidance, management considered quantitative and qualitative information to evaluate the Company's ability to meet obligations.

As of December 31, 2023, the Company has $19.1 million current assets to meet its $10.0 million current liabilities. Based on the analysis of the relevant conditions and events that are known and reasonably known as of March 6, 2024, the Company concludes that it is probable that it will be able to meet all of its financial obligations as they become due in the year 2024.

Contractual Obligations and Commitments

We subcontract with other companies to manufacture our products. During the normal course of business, our CMs procure components based upon orders placed by us. If we cancel all or part of the orders, we may still be liable to the CMs for the cost of the components purchased by the subcontractors to manufacture our products. We periodically review the potential liability, and as of December 31, 2023 we have no significant accruals recorded.

Critical Accounting Estimates

Our management's discussion and analysis of financial condition and operating results is based on our consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, as well as the reported sales and expenses during the reporting periods. These items are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates could occur in the future. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Changes in estimates are reflected in reported results for the period in which they become known. Actual results may differ materially from these estimates under different assumptions or conditions.

Inventory Valuation

Inventory is stated at the lower of cost or net realizable value (first-in, first-out method). For items manufactured by third parties, cost is determined using the first-in, first-out method (FIFO). For items that are manufactured by the Company's CMs, cost is determined using the weighted average cost method. We write-down inventory when it has been determined that conditions exist that may not allow the inventory to be sold for at the intended price or the inventory is determined to be obsolete based on assumption about future demand and market conditions. The charge related to inventory write-downs is recorded as cost of goods sold. We evaluate inventory at least annually and at other times during the year. Charges to cost of goods sold for excess, obsolete, and lower of cost or net realizable inventories totaled $1.2 million and $0.9 million in 2023 and 2022, respectively.

Stock-Based Compensation

The assumptions used in calculating the fair value of stock-based payment awards represent management's best estimates. These estimates involve inherent uncertainties and the application of management's judgment. If factors change and different assumptions are used, our stock-based compensation expense could be materially different in the future.

Stock-based compensation expense is measured and recognized in the consolidated financial statements based on the fair value of the awards granted. We use the Black-Scholes option-pricing model to estimate the fair value of our stock-based awards including: stock options and employee stock purchase plan (ESPP). This valuation model requires the input of highly subjective assumptions, the most significant of which is our estimates of expected volatility and the forfeiture rate of the award. Starting with the first quarter of 2022, we began to determine volatility by solely using the Company's own historical volatility measurements, since more than five years of historical data became available in the public market. Prior to the fourth quarter of 2022, the Company determined the volatility for stock awards granted based on the average historical price volatility for the Company and industry peers over a period equivalent to the expected term of the stock options grants. The forfeiture of stock awards is recognized upon the actual forfeitures date.

We estimate the fair value of Performance Stock Units (PSU) with a market condition using a Monte Carlo simulation model as of the date of grant to forecast performance achievement of market price and revenue targets. Key inputs in the valuation include cost of capital, market price volatility and discount rate. The number of PSUs that will ultimately be awarded are contingent on our actual level of achievement compared to the corporate financial target performance targets.

Intangible Assets and Goodwill

We have a significant amount of goodwill and finite-lived intangible assets. At December 31, 2023, goodwill and intangible assets totaled $19.1 million, or 45% of our total assets.

Our intangible assets were obtained from business combinations, such as goodwill, customer relationships, developed technologies, market related intangibles and non-compete covenants. The intangible assets were initially recorded at estimated fair value. We amortize the non-goodwill intangibles over an estimated life of 2 to 11 years, using the straight-line method.

These assets are carried at the estimated fair value at the time of acquisition and assets. However, if their estimated fair value is less than the carrying amount, we recognize an impairment charge for the amount by which the carrying amount of these assets exceeds their estimated fair value.

We perform a goodwill impairment assessment annually and during the interim when events or circumstances indicates that the fair value of a reporting unit might be below its carrying amount. The analysis may include both qualitative and quantitative factors to assess the likelihood of an impairment. Qualitative factors include industry and market considerations, overall financial performance, and other relevant events. Our quantitative impairment test may consider both the income approach and the market approach to estimate a reporting unit's fair value. Significant estimates include market segment growth rates, our assumed market segment share, estimated costs, and discount rates on the cost of capital.

We perform an intangible assets impairment assessment annually and during the interim when facts and circumstances indicate that the carrying amount may not be recoverable. These reviews can be affected by various factors, including external factors such as industry and economic trends, and internal factors such as changes in our business strategy and our forecasts for product lines.

Intangible Assets and Goodwill Impairment Assessment as of September 30, 2023

During the three months ended September 30, 2023, the Company had a decline in its market capitalization due to current and near term demand softness in the wireless connectivity space, as reflected in a material decline in share price.

- Intangible Assets

  The decline in market capitalization indicated that the carrying value of the Company's intangible assets composed of acquired intangibles, developed technologies, customer relationships and non-compete agreements may not be recoverable.

Accordingly, the Company performed an interim impairment test to determine the recoverability of the assets group by comparing the future undiscounted cash flows expected from the use of the asset group to the carrying value at September 30, 2023. The recoverability test indicated that the future expected cash flows materially exceed the asset group carrying value. Therefore, the Company did not proceed with the third step to determine the fair value of the intangible assets and compare fair value against the carrying value. Based on the assessment performed, we determined that the intangible asset carrying values are not impaired as of September 30, 2023 and the useful lives remain appropriate.

- Goodwill

  The decline in the Company's market share price during the three months ended September 30, 2023 was a triggering event that indicated that the fair value of the entity may be below its carrying amount. As a result of the triggering event, the Company performed a qualitative assessment by comparing the margin between the market capitalization and the carrying value at September 30, 2023 and at December 31, 2022. The qualitative assessment showed a significant decline in the margin between the market capitalization and the carrying value. Therefore, the Company proceeded to perform a quantitative assessment.

  The quantitative impairment test compares the fair value of the reporting unit to its carrying amount, including goodwill. To determine the fair value of the reporting unit, the Company engaged a valuation consulting firm to assist management for purposes of impairment testing. The Company estimated the fair value of our reporting unit using a weighting of the market and income approaches. For the market approach, we used the guideline public company method. Under this method we utilize information from comparable publicly traded companies with similar operating and investment characteristics as the reporting unit to derive an indication of value. For the income approach, we used a discounted cash flow methodology to derive an indication of value, which required management to make estimates and assumptions related to forecasted revenues, gross profit margins, operating income margins, working capital cash flow, income tax rates, EBITDA, perpetual growth rates, and long-term discount rates, among others. Forecasts of future cash flows were based on our best estimate of future net sales and operating expenses, based primarily on customer forecasts, industry trade organization data and general economic conditions. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. Based on the analysis performed, the Company determined the fair value of the reporting unit is greater than the carrying value. Therefore, there is no goodwill impairment charge as of September 30, 2023.

Goodwill Impairment Assessment as of December 31, 2023

For the annual goodwill impairment assessment, as of December 31, 2023, the Company evaluated the impairment considerations during the fourth quarter of 2023, starting with the interim assessment as of September 30, 2023. During the fourth quarter 2023, the Company's macroeconomic conditions, stock share, market capitalization, working capital, industry and market conditions, operating cash flow and forecasted cash flows remained stable with September 30, 2023. After assessing the totality of events or circumstances as those described in the preceding section, the Company determined that there were no events or circumstances in the fourth quarter 2023 that indicates that it is more likely than not that the fair value of a reporting unit may be less than its carrying amount. Since there was no indication that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company determined that a quantitative goodwill impairment test was not necessary as of December 31, 2023. Based on the assessment performed, we concluded that an impairment charge to goodwill was not required as of December 31, 2023.

Certain future events and circumstances, including adverse changes in the business and economic conditions and changes in customer behavior could result in changes to our assumptions and judgments used in the impairment tests. A downward revision of these assumptions could cause the total fair value of our goodwill and intangible assets to fall below carrying values and a non-cash impairment charge would be required. Such a charge may have a material effect on the consolidated financial statements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are a smaller reporting company as defined by Rule 12b-2 of the Securities Exchange Act of 1934 and are not required to provide the information under this item.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Airgain, Inc.

Index to Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
Airgain, Inc

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of Airgain, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2023 and 2022, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the two years in the period ended December 31, 2023, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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

Critical audit matters

Critical audit matters are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments.

Goodwill impairment assessment

As described further in note 7 to the financial statements, the decline in the Company’s market share price during the three months ended September 30, 2023 was a triggering event, that indicated the fair value of the entity may be below its carrying amount. It was determined the fair value of the reporting unit exceeded its carrying value, resulting in no impairment. We identified the goodwill impairment assessment as a critical audit matter.

The principal consideration for our determination that the quantitative impairment assessment is a critical audit matter is that the determination of the reporting units fair value required management to make significant estimates and assumptions related to forecasted revenues, margins, discount rate and comparable public company multiples.

Our audit procedures related to the quantitative impairment assessment included the following, among others:

- We tested management’s process for determining the fair value of the reporting unit. This included evaluating the appropriateness of the valuation methods, testing the completeness, accuracy, and relevance of data used by management, and evaluating the reasonableness of management’s significant assumptions, which included forecasted revenues and margins. We tested whether these forecasts were reasonable and consistent with historical performance, third-party market data, and other evidence obtained in other areas of the audit.
- With the assistance of our valuation specialists, we tested the Company’s discounted cash flow models, including the reasonableness of the utilized discount rate.
- With the assistance of our valuation specialists, we tested the Company’s use of the market approach, including the reasonableness of selected multiples.

/s/ GRANT THORNTON LLP

We have served as the Company’s auditor since 2022.

San Diego, California
March 6, 2024

Airgain, Inc.

Consolidated Balance Sheets

(in thousands, except par value)

	As of December 31,	
	2023	2022
Assets		
Current assets:		
Cash and cash equivalents	$ 7,881	$ 11,903
Trade accounts receivable, net	7,375	8,741
Inventories	2,403	4,226
Prepaid expenses and other current assets	1,422	2,284
Total current assets	19,081	27,154
Property and equipment, net	2,507	2,765
Leased right-of-use assets	1,392	2,217
Goodwill	10,845	10,845
Intangible assets, net	8,234	11,203
Other assets	170	216
Total assets	$ 42,229	$ 54,400
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 6,472	$ 6,507
Accrued compensation	728	2,874
Accrued liabilities and other	1,926	2,615
Short-term lease liabilities	865	904
Total current liabilities	9,991	12,900
Deferred tax liability	151	139
Long-term lease liabilities	674	1,536
Total liabilities	10,816	14,575
Commitments and contingencies (Note 14)		
Stockholders' equity:		
Common stock and additional paid-in capital, par value $0.0001, 200,000 shares authorized; 11,010 shares issued and 10,469 shares outstanding at December 31, 2023; and 10,767 shares issued and 10,226 shares outstanding at December 31, 2022	115,295	111,282
Treasury stock, at cost: 541 shares at December 31, 2023 and 2022	(5,364)	(5,364)
Accumulated deficit	(78,521)	(66,093)
Accumulated other comprehensive income	3	—
Total stockholders' equity	31,413	39,825
Total liabilities and stockholders' equity	$ 42,229	$ 54,400

The accompanying notes are an integral part of these consolidated financial statements.

Airgain, Inc.

Consolidated Statements of Operations

(in thousands, except per share data)

	For the Years Ended December 31,	
	2023	2022
Sales	$ 56,040	$ 75,895
Cost of goods sold	35,277	47,923
Gross profit	20,763	27,972
Operating expenses:		
Research and development	10,505	11,345
Sales and marketing	9,126	11,174
General and administrative	13,532	14,033
Total operating expenses	33,163	36,552
Loss from operations	(12,400)	(8,580)
Other (income) expense:		
Interest income, net	(109)	(63)
Other expense	9	58
Total other income	(100)	(5)
Loss before income taxes	(12,300)	(8,575)
Income tax expense	128	84
Net loss	$ (12,428)	$ (8,659)
Net loss per share:		
Basic	$ (1.20)	$ (0.85)
Diluted	$ (1.20)	$ (0.85)
Weighted average shares used in calculating loss per share:		
Basic	10,392	10,190
Diluted	10,392	10,190

The accompanying notes are an integral part of these consolidated financial statements.

Airgain, Inc.

Consolidated Statements of Comprehensive Loss

(in thousands)

	For the Years Ended December 31,	
	2023	2022
Net loss	$ (12,428)	$ (8,659)
Other comprehensive income:		
Foreign currency translation adjustment	3	—
Comprehensive loss	$ (12,425)	$ (8,659)

The accompanying notes are an integral part of these consolidated financial statements.

Airgain, Inc.

Consolidated Statements of Stockholders' Equity

(in thousands)

	For the Years Ended December 31,			
	2023		2022	
	Common Stock Shares	Amount	Common Stock Shares	Amount
Total stockholders' equity, beginning balance	10,226	$ 39,825	10,097	$ 44,173
Common stock and additional paid-in capital:				
Balance at beginning of period	10,226	111,282	10,097	106,971
Stock-based compensation	—	4,471	—	4,083
Common stock withheld related to net share settlement of equity awards	—	(690)	—	—
Release of RSUs, stock issued under ESPP and exercise of stock option	243	232	129	228
Balance at end of period	10,469	115,295	10,226	111,282
Treasury stock:				
Balance at beginning of period	—	(5,364)	—	(5,364)
Balance at end of period	—	(5,364)	—	(5,364)
Accumulated deficit:				
Balance at beginning of period	—	(66,093)	—	(57,434)
Net loss	—	(12,428)	—	(8,659)
Balance at end of period	—	(78,521)	—	(66,093)
Accumulated other comprehensive income:				
Balance at beginning of period	—	—	—	—
Foreign currency translation adjustments	—	3	—	—
Balance at end of period	—	3	—	—
Total stockholders' equity, ending balance	10,469	$ 31,413	10,226	$ 39,825

The accompanying notes are an integral part of these consolidated financial statements.

Airgain, Inc.

Consolidated Statements of Cash Flows

(in thousands)

	For the Years Ended December 31, 2023	2022
Cash flows from operating activities:		
Net loss	$ (12,428)	$ (8,659)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Depreciation	661	675
Loss on disposal of property and equipment	—	4
Amortization of intangible assets	2,969	3,026
Stock-based compensation	3,681	4,978
Deferred tax liability	12	30
Changes in operating assets and liabilities:		
Trade accounts receivable	1,367	2,015
Inventories	1,823	4,723
Prepaid expenses and other current assets	822	(1,012)
Other assets	6	137
Accounts payable	(93)	1,037
Accrued compensation	(1,253)	(35)
Accrued liabilities and other	(793)	(370)
Payments of contingent consideration fair value changes	—	(2,040)
Lease liabilities	(75)	(63)
Net cash (used in) provided by operating activities	(3,301)	4,446
Cash flows from investing activities:		
Purchases of property and equipment	(346)	(763)
Proceeds from sale of equipment	—	13
Net cash used in investing activities	(346)	(750)
Cash flows from financing activities:		
Cash paid for business acquisition contingent consideration	—	(6,532)
Payments for withholding taxes related to net share settlement of equity awards	(690)	—
Issuance of shares for stock purchase and option plans	232	228
Net cash used in financing activities	(458)	(6,304)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	3	—
Net decrease in cash, cash equivalents and restricted cash	(4,102)	(2,608)
Cash, cash equivalents, and restricted cash; beginning of period	12,078	14,686
Cash, cash equivalents, and restricted cash; end of period	$ 7,976	$ 12,078
Supplemental disclosure of cash flow information:		
Taxes paid	$ 112	$ 197
Supplemental disclosure of non-cash investing and financing activities:		
Operating lease liabilities resulting from right-of-use assets	$ 11	$ —
Accrual of property and equipment	$ 58	$ —
Cash and cash equivalents and restricted cash	$ 7,881	$ 11,903
Restricted cash included in other assets	95	$ 175
Total cash, cash equivalents, and restricted cash	$ 7,976	$ 12,078

The accompanying notes are an integral part of these consolidated financial statements.

Note 1. Description of Business and Basis of Presentation

Description of Business

Airgain, Inc. was incorporated in the State of California on March 20, 1995; and reincorporated in the State of Delaware on August 17, 2016. Airgain, Inc. together with its subsidiaries are herein referred to as the "Company," "we," or "our." The Company is a leading provider of connectivity solutions including embedded components, external antennas, and integrated systems that enable wireless networking in the consumer, enterprise, and automotive markets. The Company's headquarters is in San Diego, California.

Basis of Presentation and Principles of Consolidation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP) and applicable rules and regulations of the Securities and Exchange Commission (SEC) regarding financial reporting. The consolidated financial statements include the accounts of the Company and our wholly owned subsidiary. All intercompany transactions and investments have been eliminated in consolidation.

Segment Information

The Company's operations are located primarily in the United States and most of its assets are located in San Diego, California and Plymouth, Minnesota.

The Company operates in one segment related to providing connectivity solutions – embedded components, external antennas, and integrated systems. The Company's chief operating decision-maker is our chief executive officer, who reviews operating results on an aggregate consolidated basis for purposes of regularly making operating decisions, allocation of resources and assessing performance as a single operating segment.

Use of Estimates

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 of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Note 2. Significant Accounting Policies

Cash Equivalents

Cash equivalents are comprised of short-term, highly liquid investments with maturities of 90 days or less at the date of purchase. The cash balances may, at times, exceed federally insured limits. Accounts are guaranteed by the Federal Deposit Insurance Corporation (FDIC) up to $250,000.

Trade Accounts Receivable

We perform ongoing credit evaluations of our customers and assess each customer's credit worthiness. The policy for determining when receivables are past due or delinquent is based on the contractual terms agreed upon. We monitor collections and payments from our customers and analyze for an allowance for credit losses. The allowance for credit losses is based upon applying an expected credit loss rate to receivables based on the historical loss rate and is adjusted for current conditions, including any specific customer collection issues identified, and economic conditions forecast. Delinquent account balances are written off after management has determined that the likelihood of collection is remote. An allowance for doubtful accounts is established when, in the opinion of management, collection of the account is doubtful.

Inventory

As of April 2022, all of the Company's products are manufactured by third parties that retain ownership of the inventory until title is transferred to the customer at the shipping point. In some situations, the Company retains ownership of inventory which is held in third-party contract manufacturing facilities. In certain instances, shipping terms are delivery-at-place and the Company is responsible for arranging transportation and delivery of goods ready for unloading at the named place. In those instances, the Company bears all risk involved in bringing the goods to the named place and records the related inventory in transit to the customer as inventory on the accompanying consolidated balance sheets. In the second quarter of 2022, we closed our facility located in Scottsdale, Arizona where certain of our products were previously manufactured.

Inventory is stated at the lower of cost or net realizable value. For items manufactured by our CMs, cost is determined using the weighted average cost method. For items manufactured by third parties, cost is determined using the first-in, first-out method (FIFO). Any adjustments to reduce the cost of inventories to their net realizable value are recognized in earnings in the current period. Write downs for excess and obsolete inventories are estimated based on product life cycles, quality issues, and historical experience.

In some instances, the Company holds consigned inventories at its CMs' locations due to actual or pending customers' orders. The Company recognized the consigned inventory as an asset in its financial statements.

Property and Equipment

Property and equipment are stated at cost and are depreciated using the straight-line method over the estimated useful lives of the assets, generally three to ten years. The estimated useful lives for leasehold improvements are determined as either the estimated useful life of the asset or the lease term, whichever is shorter. Repairs and maintenance are expensed as incurred. Property and equipment are reviewed for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. When assets are disposed of (or otherwise sold), the cost and related accumulated depreciation are removed from the accounts and any gain or loss on the disposal of property and equipment is classified as other expense (income) in the Company's consolidated statement of operations.

Goodwill

Goodwill represents the excess of cost over fair value of net assets acquired. We account for our goodwill under the authoritative guidance ASC 350 for goodwill and other intangible assets and the provisions of ASU 2017-04, Simplifying the Test for Goodwill Impairment, which we early adopted in fiscal year 2020. Goodwill is not amortized but is tested for impairment annually as of December 31 or more frequently if events or changes in circumstances indicate that our goodwill might be impaired. Such circumstances may include, but not limited to (1) a decline in microeconomic conditions, (2) a significant decline in our financial performance or (3) a significant decline in the price of our common stock for a sustained period of time. We consider the aggregation of the relevant qualitative factors, and conclude whether it is more likely than not that the fair value of our reporting unit is less than the carrying value.

If we conclude that it is more likely than not that the fair value of our reporting unit is less than the carrying value, we perform a quantitative impairment test. The quantitative impairment test compares the fair value of the reporting unit to its carrying amount, including goodwill. If the fair value of the reporting unit exceeds the carrying amount of the net assets assigned to that reporting unit, goodwill is not considered impaired. However, if the fair value of the reporting unit is lower than the carrying amount of the net assets assigned to the reporting unit, an impairment charge is recognized equal to the excess of the carrying amount over the fair value. The impairment charge is limited to the goodwill amount of the reporting unit.

Determining the fair value of a reporting unit is judgmental in nature and involves the use of significant estimates and assumptions. For the market approach of valuation, we may use the guideline public company method. Under this method we utilize information from comparable publicly traded companies with similar operating and investment characteristics as the reporting unit to derive an indication of value. For the income approach of valuation, we use a discounted cash flow methodology to derive an indication of value, which required management to make estimates and assumptions related to forecasted revenues, gross profit margins, operating income margins, working capital cash flow, income tax rates, EBITDA, perpetual growth rates, and long-term discount rates, among others. In addition, we make certain judgments and assumptions in determining our reporting unit. We base our fair value estimates on assumptions we believe to be reasonable but that are unpredictable and inherently uncertain. Actual future results may differ from those estimates.

Intangibles

The Company's identifiable finite-lived intangible assets are comprised of acquired intangibles, developed technologies, customer relationships and non-compete agreements. The cost of the market-related intangible assets with finite lives is amortized on a straight-line basis over the assets' respective estimated useful lives.

We assess potential impairments to our intangible assets in accordance with the authoritative guidance for impairment or disposal of long-lived assets (ASC 360) when events or changes in circumstances indicate that the carrying value may not be recoverable. We assess the impairment of long-lived and intangible assets whenever events or changes in circumstances indicate that the carrying value may not be recoverable. As a first step, we consider factors, which may include the following, but are not limited to: (1) significant underperformance relative to historical or projected future operating results; (2) significant negative industry or economic trends; or (3) a significant decline in our stock price for a sustained period.

If this assessment indicates that the carrying value of the assets may not be recoverable, the Company is required to perform the second step to test the asset group for recoverability. This recoverability test compares the future undiscounted cash flows expected from the use of the asset group to its carrying value. If the carrying value is more than the undiscounted future cash flows, the Company is required perform a third step to determine the fair value of the asset group and compare fair value against the carrying value. Any excess carrying value over the fair value needs to be recognized as an impairment loss.

Determining the recoverability of long-lived or intangible assets is judgmental in nature and involves the use of significant estimates and assumptions. These estimates and assumptions include revenue growth rates and operating margins used to calculate projected future cash flows and the future market value of our asset group. In addition, we make certain judgments and assumptions in determining our asset group. We base our recoverability estimates on assumptions we believe to be reasonable but that are unpredictable and inherently uncertain. Actual future results may differ from those estimates.

Revenue Recognition

Under ASC Topic 606 "Revenue from Contracts with Customers", the Company recognize revenue when, or as the control of the promised goods or services is transferred to the customers in an amount that reflects the consideration the Company expects to be entitled in exchange for those goods or services. In applying this core principle, the Company performs the following five-steps only when it is probable that substantially all of the consideration that it will be entitled in exchange for the goods or services that will be transferred to the customer:

(i) identify the contract(s) with the customer,

(ii) identify the performance obligations in the contract,

(iii) determine the transaction price,

(iv) allocate the transaction price to the performance obligation(s) in the contract and

(v) recognize revenue when or as the entity satisfies performance obligations. A performance obligation is at a point in time, except if it meets any of the three criteria, which will require recognition of revenue over time:

- the customer simultaneously receives and consumes the benefit provided by the entity's performance as the entity performs
- the entity's performance creates or enhances an asset (for example, work in process) that the customer controls as the asset is created or enhanced, and
- the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date.

Most of the Company's revenue is generated from product sales and the revenue is recognized at a point-in-time when control is transferred to the customer. Each purchase order, along with existing customer agreements, when applicable, represents a contract from a customer and each product sold represents a distinct performance obligation. Revenue is recognized when control is transferred to the customer at a point in time either when the product is shipped to or received by the customer, based on the terms of the specific agreement with the customer, and the Company has an enforceable right to payment for the product. The Company allocates the transaction price, which is generally the quoted price per terms of the contract and the consideration the Company expects to receive, to each performance obligation. The Company offers return rights and/or pricing credits under certain circumstances. We estimate product returns based on historical sales and return trends and record against revenue and corresponding refund liability.

A portion of the Company's revenue is recognized over time, including: data subscription, test services or custom design services. Revenue from data subscription plans relate to purchased asset trackers with activated data lines, through a third-party service provider. Data subscription plan revenues are recognized monthly based on the fee stated in the contract, as the customer is simultaneously receiving and consuming the benefits provided throughout the Company's monthly performance obligation. Test service revenues are recognized monthly based on the fee stated in the contract for obligations over time on assets that the customer controls. Design service fees are paid in advance; the prepayments are deferred revenues and are recorded as contract liabilities. Most of the design service fees are recognized based on the Company's achievement of milestones. The Company's performance for the design services does not create an asset with an alternative use to the Company and the Company has an enforceable right to payment for performance completed to date. We recognize from the contract liabilities as milestones are achieved over service periods ranging from three (3) to eighteen (18) months.

The Company's contracts with customers do not typically include extended payment terms. Payment terms may vary by contract and type of customer and generally range from 30 to 90 days from delivery.

The Company provides assurance-type warranties on all product sales ranging from one to two years. The estimated warranty costs are accrued for at the time of sale based on historical warranty experience plus any known or expected changes in warranty exposure.

The Company has opted to not disclose the portion of revenues allocated to partially unsatisfied performance obligations, which represent products to be shipped within 12 months under open customer purchase orders, at the end of the current reporting period as allowed under ASC 606. The Company has also elected to record sales commissions when incurred, pursuant to the practical expedient under ASC 340, Other Assets and Deferred Costs, as the period over which the sales commission asset that would have been recognized is less than one year.

Shipping and Transportation Costs

Shipping and other transportation costs expensed as incurred were $0.4 million and $0.5 million for the years ended December 31, 2023 and 2022, respectively. These costs are included in sales and marketing expenses in the accompanying consolidated statements of operations.

Research and Development Costs

Research and development costs are expensed as incurred.

Advertising Costs

Advertising costs are expensed as incurred and were $0.3 million and $0.5 million for the years ended December 31, 2023 and 2022, respectively. These costs are included in sales and marketing expenses in the accompanying consolidated statements of operations.

Income Taxes

The Company records income taxes under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statements carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. When applicable a valuation allowance is established to reduce any deferred tax asset when we determine that it is more likely than not that some portion of the deferred tax asset will not be realized.

The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company records interest related to unrecognized tax benefits in interest expense and penalties in general and administrative expenses.

Stock-Based Compensation

We recognize compensation costs related to stock options and restricted stock units granted to employees and directors based on the estimated fair value of the awards on the date of grant. We estimate the option grant fair values, and the resulting stock-based compensation expense, using the Black-Scholes option-pricing model. The grant date fair value of stock-based awards are expensed on a straight-line basis over the requisite service period of the entire reward. The Company recognizes forfeitures when incurred.

The assumptions used in the Black-Scholes option-pricing model are as follows:

- *Fair value of our common stock*. The Company's common stock is valued by reference to the publicly traded price of our common stock.
- *Expected term*. The expected term represents the period of time stock-based awards are expected to be outstanding.
- *Expected weighted average volatility*. From 2018 through 2021, the Company estimated expected volatility using our historical share prices along with volatilities of the selected comparable companies. Beginning 2022, we estimated expected volatility using solely our historical share price volatilities.
- *Risk-free interest rate*. The risk-free interest rate is based on the U.S. Treasury yield in effect at the time of grant for zero coupon U.S. Treasury notes with maturities approximately equal to the expected term.
- *Expected dividend*. The expected dividend is assumed to be zero as the Company has never paid dividends and have no current plans to pay any dividends.

Fair Value Measurements

The carrying values of the Company's financial instruments, including cash, trade accounts receivable, accounts payable, accrued liabilities and deferred purchase price obligations approximate their fair values due to the short maturity of these instruments.

Fair value measurements are market-based measurements, not entity-specific measurements. Therefore, fair value measurements are determined based on the assumptions that market participants would use in pricing the asset or liability. The Company follows a three-level hierarchy to prioritize the inputs used in the valuation techniques to derive fair values. The basis for fair value measurements for each level within the hierarchy is described below:

- Level 1: Quoted prices in active markets for identical assets or liabilities.
- Level 2: Quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable in active markets.
- Level 3: Valuations derived from valuation techniques in which one or more significant inputs are unobservable in active markets.

Recently Adopted Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board (FASB) issued ASU 2016-13, Financial Instruments-Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments. This standard changes the methodology for measuring credit losses on financial instruments and the timing of when such losses are recorded. The Company adopted this standard in the first quarter of fiscal 2023; it did not have a material impact on our financial statements.

In December 2019, the FASB issued ASU 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes. ASU 2019-12 clarifies classification of franchise taxes, the enacted changes in tax laws or rates and the accounting for transactions that result in a step-up in the tax basis of goodwill. This standard eliminates certain exceptions to the guidance in Topic 740 related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. This update is effective for public entities for annual reporting periods and interim periods within those years beginning after December 15, 2020. The adoption of ASU 2019-12 had no impact on the Company’s consolidated financial statements.

Recently Issued Accounting Pronouncements

In November 2023, the FASB issued ASU 2023-07, “Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures.” ASU No. 2023-07 require that a public entity disclose, on an annual and interim basis, significant segment expenses that are regularly provided to an entity's chief operating decision maker (CODM), amounts and descriptions of other reportable segments, and any additional measures of a segment's profit or loss used by the CODM when deciding how to allocate resources. The ASU is applicable to entities with a single reportable segment. This ASU is effective for fiscal years beginning after December 15, 2023, and for interim periods within fiscal years beginning after December 15, 2024. Early adoption is permitted. The ASU should be applied retrospectively to all prior periods presented in the financial statements. The Company is currently evaluating the impact of the ASU on our disclosures within the consolidated financial statements. As the amendments apply to the Company's reportable segment disclosures only, the Company does not expect adoption to have a material impact on its consolidated financial statements.

In December 2023, the FASB issued ASU 2023-09, "Income Taxes (Topic 740): Improvements to Income Tax Disclosures." ASU No. 2023-09 requires expanded disaggregated information about a reporting entity’s effective tax rate reconciliation as well as disclosure of income taxes paid by jurisdiction. The amendments in ASU are effective for fiscal years beginning after December 15, 2024 with early adoption permitted. Retrospective application of the amendments are permitted. The Company will evaluate the ASU to determine its impact on the Company’s disclosures. As the amendments apply to income tax disclosures only, the Company does not expect adoption to have a material impact on its consolidated financial statements.

We have assessed all other ASUs issued but not yet adopted and concluded that those not disclosed are not relevant to the Company or are not expected to have a material impact.

Note 3. Net Loss Per Share

Basic net loss per share is calculated by dividing net loss available to common stockholders by the weighted average shares of common stock outstanding for the period. Diluted net loss per share is calculated by dividing net loss by the weighted average shares of common stock outstanding for the period plus amounts representing the dilutive effect of securities that are convertible into common stock. The Company calculates diluted loss per common share using the treasury stock method.

The following table presents the computation of net loss per share (in thousands except per share data):

	For the Years Ended December 31,	
	2023	2022
Numerator:		
Net loss	$ (12,428)	$ (8,659)
Denominator:		
Basic weighted average common shares outstanding	10,392	10,190
Diluted weighted average common shares outstanding	10,392	10,190
Net loss per share:		
Basic	$ (1.20)	$ (0.85)
Diluted	$ (1.20)	$ (0.85)

Potentially dilutive securities (in common stock equivalent shares) not included in the calculation of diluted net loss per share because to do so would be anti-dilutive are as follows (in thousands):

	For the Years Ended December 31,	
	2023	2022
Stock options and restricted stock	2,246	1,903
Total common stock equivalent shares	2,246	1,903

Note 4. Cash and Cash Equivalents

The following tables show the Company's cash and cash equivalents by significant investment category (in thousands):

	As of December 31,	
	2023	2022
Cash	$ 7,581	$ 8,323
Level 1:		
Money market funds	300	3,580
Total	$ 7,881	$ 11,903

Restricted Cash

As of December 31, 2023, the Company had $95,000 in cash on deposit to secure certain lease commitments; $40,000 of which short-term in nature and recorded in prepaid expenses and other current assets and $55,000 of which is restricted for more than twelve months and recorded in other assets in the Company's consolidated balance sheet. As of December 31, 2022, the Company had $175,000 in cash on deposit to secure certain lease commitments; $80,000 of which is short-term in nature and recorded in prepaid expenses and other current assets and $95,000 of which is restricted for more than twelve months and recorded in other assets in the Company's consolidated balance sheet.

Note 5. Inventory

Inventory is comprised of the following (in thousands):

	As of December 31,	
	2023	2022
Raw materials	$ 661	$ 1,060
Finished goods	1,742	3,166
Total Inventory	$ 2,403	$ 4,226

Consigned Inventory is comprised of the following (in thousands):

	As of December 31,	
	2023	2022
Raw materials	$ 558	$ 631
Finished goods	598	2,272
Total Consigned Inventory	$ 1,156	$ 2,903

Excess and obsolete inventory reserves were $1.7 million and $0.9 million as of December 31, 2023 and 2022, respectively.

Note 6. Property and Equipment

Depreciation and amortization of property and equipment is calculated on the straight-line method based on the shorter of the estimated useful life or the term of the lease for tenant improvements and three to ten years for all other property and equipment. Property and equipment consist of the following (in thousands):

	As of December 31,	
	2023	2022
Computers and software	$ 811	$ 703
Furniture, fixtures, and equipment	427	409
Manufacturing and testing equipment	5,371	5,194
Construction in process	45	16
Leasehold improvements	848	848
Vehicles	55	—
Property and equipment, gross	7,557	7,170
Less accumulated depreciation	(5,050)	(4,405)
Property and equipment, net	$ 2,507	$ 2,765

Depreciation expense was $0.7 million for each of the years ended December 31, 2023 and 2022.

Note 7. Intangible Assets and Goodwill

Other Intangible Assets

The following is a summary of the Company’s acquired intangible assets (dollars in thousands):

	December 31, 2023			
	Weighted average amortization period (in years)	Gross carrying amount	Accumulated amortization	Net carrying amount
Market related intangibles	5	$ 1,820	$ 1,135	$ 685
Customer relationships	7	13,780	8,993	4,787
Developed technologies	11	4,380	1,618	2,762
Covenants to non-compete	2	115	115	—
Total intangible assets, net		20,095	11,861	8,234

	December 31, 2022						
	Weighted average amortization period (in years)		Gross carrying amount		Accumulated amortization		Net carrying amount
Market related intangibles	5	$	1,820	$	795	$	1,025
Customer relationships	7		13,780		6,720		7,060
Developed technologies	11		4,380		1,263		3,117
Covenants to non-compete	2		115		114		1
Total intangible assets, net		$	20,095	$	8,892	$	11,203

Estimated annual amortization of intangible assets for the next five years and thereafter is shown in the following table (in thousands):

		Estimated future amortization
2024	$	2,968
2025		2,958
2026		557
2027		356
Thereafter		1,395
Total	$	8,234

Actual amortization expense to be reported in future periods could differ from these estimates as a result of acquisitions, divestitures, and asset impairments, among other factors. Amortization expense was $3.0 million for the each of the years ended December 31, 2023 and 2022, respectively.

No impairment losses were recorded against the other intangibles for the years ended December 31, 2023 and 2022, respectively.

During the three months ended September 30, 2023, the Company had a decline in its market capitalization, as reflected in a material decline in share price. The decline in market capitalization indicated that the carrying value of the Company's intangible assets composed of acquired intangibles, developed technologies, customer relationships and non-compete agreements may not be recoverable.

Accordingly under ASC 360, the Company performed an interim impairment test to determine the recoverability of the assets group by comparing the future undiscounted cash flows expected from the use of the asset group to the carrying value at September 30, 2023. The Company determined under ASC 360-10-55-24 that the reporting unit is the asset group for the purposes of assessing impairment of the intangible assets. The cash flows of the intangible assets are dependent on the reporting entity as a whole. The cash flows of other assets and liabilities in various departments of the Company such as research, administrative and sales and marketing contribute to the generation of cash flows from the intangible assets. The recoverability test indicated that the future expected cash flows materially exceed the asset group carrying value. Therefore, the Company did not proceed with the third step to determine the fair value of the intangible assets and compare fair value against the carrying value. Based on the assessment performed, we determined that the intangible asset carrying values are not impaired as of September 30, 2023 and the useful lives remain appropriate.

For the annual finite-lived intangible assets impairment assessment, as of December 31, 2023, the Company evaluated the impairment considerations during the fourth quarter of 2023, starting with the interim assessment as of September 30, 2023. During the fourth quarter 2023, the Company determined that there were no triggering events or circumstances in the fourth quarter of 2023 to indicate that the carrying value of the finite-lived asset group may not be recoverable. Based on the assessment performed, we concluded that an impairment charge to finite-lived intangible assets was not required as of December 31, 2023 and the useful lives remain appropriate.

Goodwill

No impairment losses were recorded against the goodwill during the for the years ended December 31, 2023 and 2022, respectively.

The decline in the Company's market share price during the three months ended September 30, 2023 was a triggering event that indicated that the fair value of the entity may be below its carrying amount. As a result of the triggering event, the Company performed a qualitative assessment by comparing the margin between the market capitalization and the carrying value at September 30, 2023 and at December 31, 2022. The qualitative assessment showed a significant decline in the margin between the market capitalization and the carrying value. Therefore, the Company proceeded to perform a quantitative assessment.

The quantitative impairment test compares the fair value of the reporting unit to its carrying amount, including goodwill. To determine the fair value of the reporting unit, the Company engaged a valuation consulting firm to assist management for purposes of impairment testing under ASC 350. The Company estimated the fair value of our reporting unit using a weighting of the market and income approaches. For the market approach, we used the guideline public company method. Under this method we utilize information from comparable publicly traded companies with similar operating and investment characteristics as the reporting unit to derive an indication of value. For the income approach, we used a discounted cash flow methodology to derive an indication of value, which required management to make estimates and assumptions related to forecasted revenues, gross profit margins, operating income margins, working capital cash flow, income tax rates, EBITDA, perpetual growth rates, and long-term discount rates, among others. We then applied a weighting to the indicated values computed from the market and income approaches to derive the fair values of the reporting unit. Forecasts of future cash flows were based on our best estimate of future net sales and operating expenses, based primarily on customer forecasts, industry trade organization data and general economic conditions. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. Based on the analysis performed, the Company determined the fair value of the reporting unit is greater than the carrying value. Therefore, there is no goodwill impairment charge as of September 30, 2023.

For the annual goodwill impairment assessment, as of December 31, 2023, the Company evaluated the impairment considerations during the fourth quarter of 2023, starting with the interim assessment as of September 30, 2023. During the fourth quarter 2023, the Company's macroeconomic conditions, stock share, market capitalization, working capital, industry and market conditions, operating cash flow and forecasted cash flows remained stable with September 30, 2023. After assessing the totality of events or circumstances as those described in the preceding section, the Company determined that there were no events or circumstances in the fourth quarter 2023 that indicates that it is more likely than not that the fair value of a reporting unit may be less than its carrying amount. Since there was no indication that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company determined that a quantitative goodwill impairment test was not necessary as of December 31, 2023. Based on the assessment performed, we concluded that an impairment charge to goodwill was not required as of December 31, 2023.

Certain future events and circumstances, including adverse changes in the business and economic conditions and changes in customer behavior could result in changes to our assumptions and judgments used in the impairment tests. A downward revision of these assumptions could cause the total fair value of our goodwill and intangible assets to fall below carrying values and a non-cash impairment charge would be required. Such a charge may have a material effect on the consolidated financial statements.

Note 8. Accrued Liabilities and Other

Accrued liabilities and other is comprised of the following (in thousands):

	As of December 31,	
	2023	2022
Accrued expenses	$ 1,031	$ 815
VAT payable	339	339
Accrued income taxes	145	166
Advanced payments from contract manufacturers	17	210
Contract liabilities	—	32
Goods received not invoiced	185	529
Other current liabilities	209	524
Accrued liabilities and other	$ 1,926	$ 2,615

Note 9. Note Payable and Line of Credit

On February 18, 2022, the Company and its subsidiary NimbeLink entered into a loan and security agreement with Silicon Valley Bank, providing a revolving line of credit for $4.0 million. The line of credit only allowed for maximum advances of 80% of the aggregate face amount of certain eligible receivables. The line of credit bore an interest rate of WSJ prime (currently 7.5%) plus 1.75%. The lender had a first security interest in all of the Company's and NimbeLink’s assets, excluding intellectual property, for which the lender received a negative pledge and included certain financial and non-financial covenants. The Company was required to pay monthly interest and paid an annual commitment fee of $15,000 upon signing. As of December 31, 2022, there was no balance owed on the line of credit. The line of credit expired in February 2023.

Note 10. Leases

Operating leases

The Company has made certain assumptions and judgments when applying ASC 842, the Company elected not to recognize right-of-use assets and lease liabilities for short-term leases (lease terms of twelve months or less).

Operating lease arrangements primarily consist of office, warehouse and test house leases expiring during different years through 2025. The facility leases have original lease terms of approximately one to five years and may contain options to extend up to 5 years and/or terminate early. Options to extend are included in leased right-of-use assets and lease liabilities in the consolidated balance sheet when we are reasonably certain to renew a lease. Since the implicit rate of such leases is unknown and we may not be reasonably certain to renew leases, the Company has elected to apply a collateralized incremental borrowing rate to facility leases on the original lease term in calculating the present value of future lease payments. As of December 31, 2023 and 2022, the weighted average discount rate for operating leases was 3.8% and 3.9%, respectively, and the weighted average remaining lease term for operating leases was 1.8 years and 2.7 years, respectively.

The Company has entered into various short-term operating leases, primarily for test houses and office equipment with initial terms of 12 months or less. These short-term leases are not recorded on the Company's consolidated balance sheet and the related short-term lease expense was $0.1 million and $0.2 million for the year ended December 31, 2023 and 2022, respectively. Total operating lease cost were $1.0 million for each year ended December 31, 2023 and 2022.

The table below presents aggregate future minimum payments due under leases, reconciled to lease liabilities included in the consolidated balance sheet as of December 31, 2023 (in thousands):

2024	$	903
2025		687
Total minimum payments		1,590
Less imputed interest		(54)
Less unrealized translation gain		3
Total lease liabilities		1,539
Less short-term lease liabilities		(865)
Long-term lease liability	$	674

Note 11. Income Taxes

Income Taxes

The components of the pretax loss from operations for the years ended December 31 are as follows (in thousands):

	For the Years Ended December 31,	
	2023	2022
U.S. Domestic	12,235	8,575
Foreign	65	—
Pretax loss from operations	12,300	8,575

The income tax expense (benefit) is as follows (in thousands):

	For the Years Ended December 31,			
	2023		2022	
Current:				
U.S. federal	$	—	$	(13)
State and local		16		24
Foreign		100		43
Total current income tax expense		116		54
Deferred:				
U.S. federal		9		10
State and local		3		20
Total deferred income tax expense		12		30
Income tax expense	$	128	$	84

Tax Rate Reconciliation

Reconciliations of the total income tax provision tax rate to the statutory federal income tax rate of 21% for the years ended December 31, 2023 and 2022, respectively, are as follows (in thousands):

	For the Years Ended December 31,			
	2023		2022	
Income taxes at statutory rates	$	(2,583)	$	(1,802)
State income tax, net of federal benefit		23		44
Permanent items		40		52
Equity based compensation		386		298
Federal research credits		(122)		(374)
Federal return to provision		(10)		(1)
Foreign taxes		100		43
Other		17		77
Change in federal valuation allowance		2,277		1,747
Income tax expense	$	128	$	84

Significant Components of Current and Deferred Taxes

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities are as follows (in thousands):

	As of December 31,	
	2023	2022
Deferred tax assets:		
Net operating loss carryforwards	$ 5,846	$ 5,374
Research and AMT credits	3,937	3,742
Stock based compensation	1,831	1,891
Lease liability	383	611
Section 174 R&D Capitalization	4,159	2,319
Accrued and other	760	1,100
	16,916	15,037
Less valuation allowance	(14,578)	(11,884)
Deferred tax assets, net of allowance	2,338	3,153
Deferred tax liabilities:		
Fixed assets	(501)	(520)
Goodwill	(468)	(418)
Right-of-use asset	(340)	(556)
Intangible asset	(1,180)	(1,798)
Deferred tax liabilities	(2,489)	(3,292)
Total deferred tax liabilities	$ (151)	$ (139)

We have established a valuation allowance against our net deferred tax assets due to the uncertainty surrounding the realization of such assets. The Company periodically evaluates the recoverability of the deferred tax assets. At such time it is determined that it is more likely than not that deferred assets are realizable, the valuation allowance will be reduced. The Company has recorded a valuation allowance of $14.6 million as of December 31, 2023 as it does not believe it is more likely than not that certain deferred tax assets will be realized due to the recent history of both pre-tax book income and losses, the lack of taxable income available in carryback periods or feasible tax-planning strategies, the limited existing taxable temporary differences, and the subjective nature of forecasting future taxable income into the future. The Company increased its valuation allowance by approximately $2.7 million during the year ended December 31, 2023.

At December 31, 2023 the Company had federal and state tax loss carryforwards of approximately $23.2 million, and $11.5 million, respectively. The federal loss generated post 2018 of $11.9 million will carryforward indefinitely and be available to offset up to 80% of future taxable income each year. The remaining federal and state net operating loss carryforwards begin to expire in 2029 and 2026, respectively, if unused.

At December 31, 2023 the Company had federal and state tax credit carryforwards of approximately $2.1 million, and $1.8 million, respectively, after reduction for uncertain tax positions. The federal credits will begin to expire in 2026, if unused, and the California credits carryforwards indefinitely. The other states credits will begin to expire in 2032.

The Internal Revenue Code (IRC) Sections 382 and 383 limit annual use of NOL and research and development credit carryforwards in the event a cumulative change in ownership of more than 50% occurs within a three-year period. The Company has completed an ownership change analysis through December 31, 2022 and determined that there were no ownership changes in 2023. If a requisite ownership change occurs, the amount of remaining tax attribute carryforwards available to offset taxable income and income tax expense in future years may be restricted or eliminated. If eliminated, the related asset would be removed from deferred tax assets with a corresponding reduction in the valuation allowance. Due to the existence of the valuation allowance, limitations created by future ownership changes, if any, will not impact the Company’s effective tax rate.

The following table summarizes the reconciliation of the unrecognized tax benefits activity during the years ended December 31 (in thousands):

	2023	2022
Beginning unrecognized tax benefits	$ 1,305	$ 1,217
Gross increases - tax positions in prior period	(65)	(50)
Gross decreases – tax positions in prior period	-	(9)
Gross increases - current year tax positions	114	147
Purchase accounting	—	—
Ending unrecognized tax benefits	$ 1,354	$ 1,305

The unrecognized tax benefit amounts are reflected in the determination of the Company's deferred tax assets. If recognized, $120,000 of these amounts would impact the company's effective tax rate. We do not foresee material changes to our uncertain tax benefits within the next twelve months.

The Company's policy is to recognize interest and/or penalties related to income tax matters in income tax expense. The Company has an accrual for interest or penalties of $0.1 million on the Company's balance sheets as of December 31, 2023 and 2022. The Company has recognized no interest and/or penalties in the Statement of Operations for each of the years ended December 31, 2023 and 2022.

The company is subject to taxation in the United States, various state jurisdictions, China and the United Kingdom. Due to the existence of federal, state and foreign net operating loss and credit carryovers, the Company's tax years that remain open and subject to examination by tax jurisdiction are years 2003 and forward for federal and years 2007 and forward for the state of California.

Note 12. Stockholders' Equity

In August 2016, the Company's Board adopted the 2016 Equity Inventive Plan (the 2016 Plan) for employees, directors and consultants. In February 2021, the Board adopted the 2021 Employment Inducement Incentive Award Plan (Inducement Plan), which provides for grants of equity-based awards.

The following common stock is reserved for future issuance[(1)] (in thousands):

	As of December 31,	
	2023	2022
Stock options issued and outstanding	2,104	2,065
Stock awards issued and outstanding	817	581
Authorized for grants under the 2016 Equity Incentive Plan[(2)]	448	507
Authorized for grants under the Inducement Plan[(3)]	174	294
Authorized for grants under the 2016 Employee Stock Purchase Plan[(4)]	540	378
	4,083	3,825

(1) Treasury stock of 541,000 shares as of December 31, 2023 and 2022 are excluded from the table above.

(2) On January 1 ,2023, the number of authorized shares in the 2016 Plan increased by 431,000 shares pursuant to the evergreen provisions of the 2016 Equity Incentive Plan.

(3) On February 5, 2021, 300,000 shares were authorized pursuant to the terms of the Inducement Plan. 188,000 shares were issued under the Inducement Plan during the year ended December 31, 2023.

(4) On January 1, 2023, the number of authorized shares in the 2016 Employee Stock Purchase Plan increased by 100,000 shares pursuant to the evergreen provisions of the 2016 Employee Stock Purchase Plan.

Note 13. Stock Based Compensation

Stock-based compensation expense

Stock-based compensation is recorded in the consolidated statements of operations as follows (in thousands):

	For the Years Ended December 31,	
	2023	2022
Cost of goods sold	$ 107	$ 181
Research and development	1,062	1,056
Sales and marketing	373	1,195
General and administrative	2,139	2,546
Total stock-based compensation expense	$ 3,681	$ 4,978

Stock Options

The vesting period for stock options granted to employees is generally one to four years. All stock options granted under the 2016 Plan have a maximum contractual term of ten years.

Commencing in 2019, each non-employee member of the board of directors will receive an annual award on the first trading day in February a number of stock options having a value of $30,000 (with the award to the chairperson of the board of directors having a value of $45,000), (calculated as of the date of grant in accordance with the Black-Scholes option pricing model).

The grant-date fair value of each option award is estimated on the date of grant using the Black-Scholes-Merton option-pricing model. The weighted average assumptions for grants during the years ended December 31, 2023 and 2022 are provided in the following table:

	For the Years Ended December 31,	
	2023	2022
Expected dividend yield	0%	0%
Expected volatility	61.0%	57.4%
Expected term (years)	4.3	5.6
Risk-free interest rate	4.0%	4.6%

A summary of the Company's stock option activity is as follows (shares in thousands):

		Weighted Average		
	Number of stock options	Exercise price	Remaining contractual term (years)	Aggregate Intrinsic Value (in thousands)
Balance at December 31, 2022	2,065	$ 11.78	6.7	$ 758
Granted	396	$ 4.90		
Exercised	(12)	$ 2.30		$ 40
Expired/Forfeited	(345)	$ 13.82		
Balance at December 31, 2023	2,104	$ 10.20	6.2	$ 329
Vested and exercisable at December 31, 2023	1,482	$ 11.25	5.1	$ 264
Vested and expected to vest at December 31, 2023	2,104	$ 10.20	6.2	$ 329

During the years ended December 31, 2023 and 2022, the Company received proceeds of $28,000 and $21,000 respectively from the exercise of options.

The weighted average grant-date fair values of options granted during the years ended December 31, 2023 and 2022 were $2.53 and $4.58 per share, respectively. The grant date fair value of shares vested during the years ended December 31, 2023 and 2022 was $1.9 million and $3.4 million, respectively.

At December 31, 2023, there was $2.1 million of unrecognized compensation cost related to unvested stock options granted under the Company's equity plans that is expected to be recognized over the next 2.5 years.

Restricted Stock Units

The following table summarizes the Company's restricted stock unit activity (shares in thousands):

	Restricted stock units	Weighted average grant date fair value
Balance at December 31, 2022	444	$ 11.78
Grants	726	$ 4.94
Vested and released	(312)	$ 8.13
Forfeited	(152)	$ 8.90
Balance at December 31, 2023	706	$ 6.97

Commencing in 2019, each non-employee member of the board of directors receives, on the first trading day in February of each year, such number of restricted stock units as is determined by dividing (a) $30,000 (with the award to the chairperson of the board of directors having a value of $45,000) by (b) the 30 trade days trailing average share price.

During the year ended December 31, 2023, 28,000 restricted stock units with an average fair value of $8.00 per share were granted to the members of the Company's board of directors of which fully vest on the one year anniversary of the grant date. Employees and consultants were granted 698,200 restricted stock units with an average fair value of $4.82 per share, which vest on grant date or vest equally after each of the annual anniversaries over a four year period. During the year ended December 31, 2022, 19,100 restricted stock units with a fair value of $9.46 per share were granted to members of the Company's board of directors which shares vest on the first anniversary of the grant date, and 274,800 restricted stock units with a fair value of $8.05 per share were issued to employees which vest equally after each of the annual anniversaries over a four-year period.

As of December 31, 2023, there was $3.4 million of total unrecognized stock-based compensation expense related to non-vested restricted stock units which is expected to be recognized over a remaining weighted-average vesting period of 2.9 years.

The Company currently uses authorized and unissued shares to satisfy share award exercises.

Performance Stock Units

The following table summarizes the Company's PSU activity during the period indicated (shares in thousands):

	Performance stock units	Weighted average grant date fair value
Balance at December 31, 2022	137	$ 2.09
Grants	18	$ 0.60
Vested and released	—	$ —
Forfeited	(45)	$ 2.20
Balance at December 31, 2023	110	$ 1.79

Service as well as market and performance conditions determine the number of PSUs that the holder will earn from 0% to 150% of the target number of shares. The percentage received is based on the Company common stock price targets over a three-year service period. Additionally, the Company must achieve or exceed 75% of the year to date revenue target measured at the end of the quarter in which the price target is achieved. The market conditions have not currently been met. As of December 31, 2023, there was $0.1 million of total unrecognized compensation cost related to unvested PSUs having a weighted average remaining contractual term of 1.3 years.

We estimate the fair value of PSUs with a market condition using a Monte Carlo simulation model as of the date of grant to forecast performance achievement of market price. Key inputs in the valuation include cost of equity, market price volatility and discount rate.

Share-Settled Obligation

Share-based compensation expense for the year ended December 31, 2023 was $0.1 million for the liability classified restricted stock unit payout obligation related to non-employee compensation.

During the year ended December 31, 2023, the Company settled $0.9 million related to the 2022 bonus awards by granting 187,200 immediately vested RSUs.

Employee Stock Purchase Plan (ESPP)

The Company maintains the 2016 Employee Stock Purchase Plan (ESPP) that provides employees an opportunity to purchase common stock through payroll deductions. The ESPP is implemented through consecutive 6-month offering periods commencing on March 1 and September 1 of each year. The purchase price is set at 85% of the fair market value of the Company's common stock on either the first or last trading day of the offering period, whichever is lower. Annual contributions are limited to the lower of 20% of an employee's eligible compensation or such other limits as apply under Section 423 of the Internal Revenue Code. The ESPP is intended to qualify as an employee stock purchase plan for purposes of Section 423 of the Internal Revenue Code.

Based on the 15% discount and the fair value of the option feature of the ESPP, it is considered compensatory. Compensation expense is calculated using the fair value of the employees' purchase rights under the Black-Scholes model. The Company currently uses authorized and unissued shares to satisfy share award exercises.

During the year ended December 31, 2023, the Company received $0.2 million from the issuance of 38,401 shares and during the year ended December 31, 2022, the Company received $0.4 million from the issuance of 47,852 shares under the ESPP.

Note 14. Commitments and Contingencies

Severance and Exit Costs

The following table presents details of the liability we recorded related to severance and exit costs:

	Severance and Exit Costs (In thousands)
Balance at December 31, 2022	$ —
Accrued to expense	612
Payments	(562)
Balance at December 31, 2023	$ 50

The severance liability is recorded in accrued compensation on the accompanying consolidated balance sheet. The severance and exit cost were recorded in the relevant operating expense departments in the accompanying consolidated statement of operations.

Potential product warranty claims

The Company had a general warranty accrual of approximately $0.1 million and $0.2 million as of December 31, 2023 and December 31, 2022, respectively.

Indemnification

In some agreements to which the Company is a party, the Company has agreed to indemnify the other party for certain matters, including, but not limited to, product liability and intellectual property. To date, there have been no known events or circumstances that have resulted in any material costs related to these indemnification provisions and no liabilities have been recorded in the accompanying consolidated financial statements.

Purchase Commitments with CMs and Suppliers

A portion of our reported purchase commitments consists of firm, noncancelable, and unconditional commitments. These inventory purchase commitments with CMs and suppliers relate to arrangements to secure supply and pricing for certain product components for multi-year periods. In certain instances, these agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed.

Note 15. Concentrations

Concentration of Sales and Accounts Receivable

The following represents customers that accounted for 10% or more of total revenue:

	For the Years Ended December 31,	
	2023	2022
Customer A	15%	17%
Customer B	15%	13%
Customer C	10%	10%

The following represents customers that accounted for 10% or more of total trade accounts receivable:

	As of December, 31	
	2023	2022
Customer A	14%	12%
Customer B	14%	3%
Customer C	11%	15%
Customer D	10%	2%

The allowance for credit losses as of December 31, 2023 and 2022 were not material.

Concentration of Purchases

During the year ended December 31, 2023, the Company's products were primarily manufactured by six CMs with locations in China, Mexico, Minnesota, and Vietnam.

Concentration of Cash

The bank where most of the Company's cash was held was placed into receivership with the FDIC on March 10, 2023. The Company's cash deposits exceeded the FDIC insured limits at that time. However, the Treasury, the Federal Reserve, and the FDIC, as receiver, jointly released a statement that depositors at this specific bank would have access to their funds, including funds in excess of standard FDIC insurance limits. The Company has not experienced losses on these accounts. In the second quarter of 2023, the Company moved most of the deposits out of this institution to several accounts at a larger institutional bank. As of December 31, 2023, 88% of the deposits are at the large institutional bank.

Concentration of Property and Equipment

The Company's property and equipment, net by geographic region, are as follows (in thousands):

	As of December, 31	
	2023	2022
North America	$ 2,295	$ 2,469
Asia Pacific (APAC)	86	138
Europe, Middle East and Africa (EMEA)	126	158
Property and equipment, net	$ 2,507	$ 2,765

Note 16. Revenues

Disaggregated revenues are as follows (in thousands):

	For the Years Ended December 31,	
	2023	2022
By Market Group:		
Consumer	$ 18,934	$ 25,793
Enterprise	27,209	34,533
Automotive	9,897	15,569
Total sales	$ 56,040	$ 75,895
By Geography:		
North America	$ 33,916	$ 45,678
China (including Hong Kong and Taiwan)	20,293	28,086
Rest of the world	1,831	2,131
Total sales	$ 56,040	$ 75,895
Timing of revenue recognition:		
Products and services transferred at a point in time	$ 52,736	$ 73,109
Products and services transferred over time	3,304	2,786
Total sales	$ 56,040	$ 75,895

Revenue generated from the United States was $33.6 million and $45.3 million for the year ended December 31, 2023 and 2022, respectively.

Liability for potential rights of return was approximately $0.1 million and $0.3 million as of December 31, 2023 and 2022, respectively.

There were no contract assets at December 31, 2023 and 2022. Contract liabilities are deferred revenues that were recorded when advance payment were received for remaining performance obligations that are recognized over time. The deferred revenues were $17,000 and $0.2 million as of December 31, 2023 and 2022, respectively.

The remaining performance obligations to be recognized over time amounts to $0.6 million as of December 31, 2023.

Note 17. Employee Benefit Plan

The Company’s 401(k) plan covers all of the U.S. employees beginning the first of the month following the first 90 days of their employment. Under this plan, employees may elect to contribute up to 20% of their annual compensation to the 401(k) plan up to the statutorily prescribed annual limit. The Company matches 100% of the employee’s elective deferrals up to 4% of their annual compensation. The Company may make discretionary contributions to the 401(k) plan, but there were no discretionary contributions during the year ended December 31, 2023. The Company’s contribution expense was $0.3 million for each of the years ended December 31, 2023 and 2022.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic and current reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable and not absolute assurance of achieving the desired control objectives. In reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. In addition, the design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of the end of the period covered by this annual report. Based on such evaluation, our principal executive officer and principal financial officer have concluded that as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal controls over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Internal control over financial reporting is a process designed under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. Our internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets, (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors, and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements. Because of its inherent limitations, internal controls over financial reporting may not prevent or detect all misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

We conducted an evaluation of the effectiveness of our internal control over financial reporting. Based on our evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2023.

Attestation Report of the Registered Public Accounting Firm

This annual report does not include an attestation report of our independent registered public accounting firm due to our non-accelerated filer status.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended December 31, 2023 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

Director and Officer Trading Arrangements:

Rule 10b5-1 Trading Plans

From time to time, our officers (as defined in Rule 16a–1(f) of the Exchange Act) and directors may enter into Rule 10b5-1 or non-Rule 10b5-1 trading arrangements (as each such term is defined in Item 408 of Regulation S-K). During the three months ended December 31, 2023, none of our officers or directors adopted, amended or terminated any such trading arrangements.

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 will be contained in our definitive proxy statement to be filed with the SEC in connection with our 2024 Annual Meeting of Stockholders, or the Definitive Proxy Statement, which we expect to file with the SEC within 120 days after the close of our year ended December 31, 2023, under the headings "Election of Directors," "Our Executive Officers," and "Section 16(a) Beneficial Ownership Reporting Compliance," and is incorporated herein by reference.

Code of Business Conduct and Ethics

We adopted a Code of Business Conduct and Ethics that applies to our officers, directors and employees which is available, free of charge, on our website at www.airgain.com. The Code of Business Conduct and Ethics contains general guidelines for conducting the business of our company consistent with the highest standards of business ethics, and is intended to qualify as a "code of ethics" within the meaning of Section 406 of the Sarbanes-Oxley Act of 2002 and Item 406 of Regulation S-K. In addition, we intend to promptly disclose on our website in the future (i) the nature of any amendment to our Code of Business Conduct and Ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller or persons performing similar functions, and (ii) the nature of any waiver, including an implicit waiver, from a provision of our Code of Business Conduct and Ethics that is granted to one of these specified officers, the name of such person who is granted the waiver and the date of the waiver.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item will be contained in our Definitive Proxy Statement under the heading "Executive Compensation and Other Information" and is incorporated herein by reference.

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

The information required by this item will be set forth in the section headed "Security Ownership of Certain Beneficial Owners and Management" in our Definitive Proxy Statement and is incorporated herein by reference.

The information required by Item 201(d) of Regulation S-K will be set forth in the section headed "Executive Compensation and Other Information" in our Proxy Statement and is incorporated herein by reference.

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

The information required by this item will be set forth in the section headed "Certain Relationships and Related Person Transactions," "Board Independence" and "Board Committees and Independence" in our Definitive Proxy Statement and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item will be set forth in the section headed "Independent Registered Public Accounting Firm's' Fees" in our Definitive Proxy Statement and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

The following documents are filed as part of this annual report on Form 10-K:

1. **Financial Statements.**

   Reference is made to the Index to the registrant's Financial Statements under Item 8 in Part II of this annual report on Form 10-K.

2. **Financial Statement Schedules.**

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

3. **Exhibits**

   The documents listed in the following Exhibit Index are incorporated by reference or are filed with this annual report on Form 10-K.

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
3.1(1)	Amended and Restated Certificate of Incorporation
3.2(2)	Amended and Restated Bylaws, effective as of February 1, 2023
4.1(3)	Specimen stock certificate evidencing the shares of common stock
4.2 (4)	Description of Registered Securities
10.1(5)	Office Lease, dated June 13, 2013, by and between Kilroy Realty, L.P. and the Registrant
10.2(3)	Form of Indemnity Agreement for Directors and Officers
10.3#(5)	Airgain, Inc. 2013 Equity Incentive Plan
10.4#(5)	Form of Stock Option Grant Notice and Stock Option Agreement under the Airgain, Inc. 2013 Equity Incentive Plan
10.5#(3)	Airgain, Inc. 2016 Incentive Award Plan
10.6#(6)	Form of Stock Option Agreement under the Airgain, Inc. 2016 Incentive Award Plan
10.7#(7)	Form of Restricted Stock Unit Agreement under the Airgain, Inc. 2016 Incentive Award Plan
10.8#(12)	Form of Performance Stock Unit Agreement under the Airgain, Inc. 2016 Incentive Award Plan
10.9#(3)	Airgain, Inc. 2016 Employee Stock Purchase Plan
10.10#(12)	Airgain, Inc. 2021 Employment Inducement Incentive Award Plan
10.11#(8)	Amendment to Airgain, Inc. 2021 Employment Inducement Incentive Award Plan
10.12#(9)	Form of Stock Option Agreement under the 2021 Employment Inducement Incentive Award Plan
10.13#(8)	Form of Restricted Stock Unit Agreement under the Airgain, Inc. 2021 Employment Inducement Incentive Award Plan
10.14#(8)	Form of Performance Stock Unit Agreement under the Airgain, Inc. 2021 Employment Inducement Incentive Award Plan
10.15#(10)	NimbeLink Corp. 2016 Stock Incentive Plan
10.16#(10)	Form of Stock Option Agreement under the NimbeLink Corp. 2016 Stock Incentive Plan
10.17#(12)	Non-Employee Director Compensation Program and Stock Ownership Guidelines (as amended and restated effective February 1, 2023)
10.18#(9)	Second Amended and Restated Employment Agreement, dated April 27, 2020, by and between Jacob Suen and the Registrant
10.19#(11)	Employment Agreement effective as of February 18, 2021 between Airgain Inc. and Morad Sbahi
10.20#**(12)	Amendment to Employment Agreement effective as of November 9, 2022 between Airgain, Inc. and Morad Sbahi

10.21#(13)	Release Agreement, effective as of June 12, 2023, between Airgain, Inc. and Morad Sbahi
10.22#(4)	Severance Agreement effective as of April 20, 2021 between Airgain, Inc. and Ali Sadri
10.23#(12)	Employment Agreement, dated October 17, 2022, between Airgain, Inc. and Michael Elbaz
10.25(14)	First Amendment to Office Lease, dated February 13, 2020, by and between Kilroy Realty, L.P. and the Registrant
21.1	List of Subsidiaries of the Registrant
23.1	Consent of Grant Thornton LLP, independent registered public accounting firm
31.1	Certification of Chief Executive Officer pursuant to Rules 13a-14 and 15d-14 promulgated pursuant to the Securities Exchange Act of 1934, as amended
31.2	Certification of Chief Financial Officer pursuant to Rules 13a-14 and 15d-14 promulgated pursuant to the Securities Exchange Act of 1934, as amended
32.1*	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
97.1	Policy for Recovery of Erroneously Awarded Compensation
101.INS	Inline XBRL Instance Document–the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the inline XBRL 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)

(1) Incorporated by reference to the Registrant’s Current Report on Form 8-K filed with the SEC on August 17, 2016.
(2) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the SEC on February 6, 2023.
(3) Incorporated by reference to Amendment No. 1 to the Registrant’s Registration Statement on Form S-1 (Registration No. 333-212542) filed with the SEC on July 29, 2016.
(4) Incorporated by reference to the Registrant’s Annual Report on Form 10-K filed with the SEC on March 21, 2022
(5) Incorporated by reference to the Registrant’s Registration Statement on Form S-1 (Registration No. 333-212542) filed with the SEC on July 15, 2016.
(6) Incorporated by reference to the Registrant’s Annual Report on Form 10-K filed with the SEC on February 28, 2020
(7) Incorporated by reference to the Registrant’s Annual Report on Form 10-K filed with the SEC on March 15, 2019.
(8) Incorporated by reference to the Registrant’s Registration Statement on Form S-8 (Registration No. 333-268419) filed with the SEC on November 16, 2022.
(9) Incorporated by reference to the Registrant’s Annual Report on Form 10-K filed with the SEC on February 19, 2021.

(10) Incorporated by reference to the Registrant’s Registration Statement on Form S-8 filed with the SEC on March 3, 2021.
(11) Incorporated by reference to the Registrant’s Quarterly Report on Form 10-Q filed with the SEC on May 6, 2021.
(12) Incorporated by reference to the Registrant’s Annual Report on Form 10-K filed with the SEC on March 20, 2023.
(13) Incorporated by reference to the Registrant’s Quarterly Report on Form 10-Q filed with the SEC on August 10, 2023.
(14) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on May 7, 2020.

# Indicates management contract or compensatory plan.

* These certifications are being furnished solely to accompany this annual report pursuant to 18 U.S.C. Section 1350 and are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934 and are not to be incorporated by reference into any filing of the Registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

** Certain schedules and annexes have been omitted in accordance with Item 601(a)(5) of Regulation S-K. A copy of any omitted schedule and/or annex will be furnished supplementally to the Securities and Exchange Commission upon request.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

AIRGAIN, INC.

Date: March 6, 2024

/s/ Jacob Suen
Jacob Suen
President and Chief Executive Officer
(principal executive officer)

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

Signature	Title	Date
/s/ Jacob Suen **Jacob Suen**	President, Chief Executive Officer, and Director (Principal Executive Officer)	March 6, 2024
/s/ Michael Elbaz **Michael Elbaz**	Chief Financial Officer and Secretary (Principal Financial and Accounting Officer)	March 6, 2024
/s/ James K. Sims **James K. Sims**	Chairman	March 6, 2024
/s/ Kiva A. Allgood **Kiva A. Allgood**	Director	March 6, 2024
/s/ Tzau-Jin Chung **Tzau-Jin Chung**	Director	March 6, 2024
/s/ Joan H. Gillman **Joan H. Gillman**	Director	March 6, 2024
/s/ Thomas A. Munro **Thomas A. Munro**	Director	March 6, 2024
/s/ Arthur M. Toscanini **Arthur M. Toscanini**	Director	March 6, 2024

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