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

FORM 10-K

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

FOR THE FISCAL YEAR ENDED JANUARY 2, 2022
OR

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

For the transition period from to
Commission File Number: 000-22671

QUICKLOGIC CORPORATION

(Exact name of registrant as specified in its charter)

Delaware **(State or other jurisdiction of incorporation or organization)**	**77-0188504** **(I.R.S. Employer Identification Number)**

2220 Lundy Avenue, San Jose, CA 95131
(Address of principal executive offices, including zip code)

Registrant's telephone number, including area code:
(408) 990-4000

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

Title of Each Class	Trading Symbol	Name of Exchange on which Registered
Common Stock, $0.001 par value	QUIK	The Nasdaq Capital Market

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

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 Section 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the 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, or a smaller reporting company or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated Filer	☐
Non-accelerated filer	☒	Smaller Reporting Company	☒
Emerging growth company	☐		

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

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

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

The aggregate market value of voting stock held by non-affiliates of the registrant as of July 4, 2021, the registrant's most recently completed second fiscal quarter, was $75,951,915 based upon the last closing price reported for such date on the Nasdaq Capital Market. For purposes of this disclosure, shares of common stock held by persons who hold more than 5% of the outstanding shares of common stock and shares held by executive officers and directors of the registrant have been excluded in that such persons may be deemed to be affiliates. This determination is not necessarily conclusive.

As of March 14, 2022, the registrant had 12,362,334 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Item 1 of Part 1 of this Form 10-K, Item 5 of Part II of this Form 10-K and Items 10, 11, 12, 13 and 14 of Part III of this Form 10-K incorporate information by reference from the Proxy Statement for the registrant’s Annual Meeting of Stockholders to be held on or about May 10, 2022, the "Proxy Statement". Except with respect to the information specifically incorporated by reference in this Form 10-K, the Proxy Statement is not deemed to be filed as part hereof.

QUICKLOGIC CORPORATION

TABLE OF CONTENTS

		Page
PART I		
Item 1.	Business	4
Item 1A.	Risk Factors	11
Item 1B.	Unresolved Staff Comments	21
Item 2.	Properties	21
Item 3.	Legal Proceedings	21
Item 4.	Mine Safety Disclosures	21
PART II		
Item 5.	Market for the Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	22
Item 6.	Selected Financial Data	24
Item 7.	Management’s Discussion and Analysis of Financial Condition and Results of Operations	25
Item 7A.	Quantitative and Qualitative Disclosures About Market Risk	36
Item 8.	Financial Statements and Supplementary Data	37
Item 9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	37
Item 9A.	Controls and Procedures	65
Item 9B.	Other Information	66
PART III		
Item 10.	Directors, Executive Officers and Corporate Governance	67
Item 11.	Executive Compensation	67
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	67
Item 13.	Certain Relationships, Related Transactions and Director Independence	67
Item 14.	Principal Accounting Fees and Services	67
PART IV		
Item 15.	Exhibits and Financial Statement Schedules	68
Signatures		71

FORWARD-LOOKING STATEMENT AND RISK FACTORY SUMMARY

Forward-Looking Statements

This Annual Report on Form 10-K, including the information contained in "Management's Discussion and Analysis of Financial Condition and Results of Operations", as well as information contained in "Risk Factors" in Item 1A and elsewhere in this Annual Report on Form 10-K, contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 regarding our business, financial condition, results of operations and prospectus. We intend that these forward-looking statements be subject to the safe harbors created by those provisions. Forward-looking statements are generally written in the future tense and/or are preceded by words such as "will," "may," "should," "forecast," "could," "expect," "suggest," "believe," "anticipate," "intend," "plan," "future," "potential," "target," "seek," "continue," "if" or other similar words.

The forward-looking statements contained in this Annual Report involve a number of risks and uncertainties, many of which are outside of our control. Factors that could cause actual results to differ materially from projected results include, but are not limited to, risks associated with (i) the conversion of our design opportunities into revenue; (ii) the commercial and technical success of our new products and our successful introduction of products and solutions incorporating emerging technologies or standards; (iii) our dependence on our relationships with third parties to manufacture our products and solutions; (iv) our dependence upon single suppliers to fabricate and assemble our products; (v) the liquidity required to support our future operating and capital requirements; (vi) our ability to accurately estimate quarterly revenue; (vii) our expectations about market and product trends; (viii) our future plans for partnerships and collaborations; (ix) our dependence upon a few customers for a significant portion of our total revenue; (x) our ability to forecast demand for our products; (xi) our dependence on our international business operations; (xii) our ability to attract and retain key personnel; (xiii) our ability to remain competitive in our industry; (xiv) our ability to protect our intellectual property rights; (xv) our ability to prevent cyberattacks and protect our data; and (xvi) our ability to handle natural disasters and epidemics, such as the recent outbreak of the COVID-19 virus*. Although we believe that the assumptions underlying the forward-looking statements contained in this Annual Report are reasonable, any of the assumptions could be inaccurate, and therefore there can be no assurance that such statements will be accurate. The risks, uncertainties and assumptions referred to above that could cause our results to differ materially from the results expressed or implied by such forward-looking statements include, but are not limited to, those discussed under the heading "Risk Factors" in Part I, Item 1A hereto and the risks, uncertainties and assumptions discussed from time to time in our other public filings and public announcements. All forward-looking statements included in this document are based on information available to us as of the date hereof. In light of the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of such information should not be regarded as a representation by us or any other person that the results or conditions described in such statements or our objectives and plans will be achieved. Furthermore, past performance in operations and share price is not necessarily indicative of future performance. We disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.*

As used herein, "QuickLogic", the "Company", "we", "our" and similar terms include QuickLogic Corporation and its subsidiaries, unless the context indicates otherwise.

PART I

ITEM 1. BUSINESS

General

QuickLogic Corporation ("the Company") was founded in 1988 and reincorporated in Delaware in 1999. Our vision is to transform the way people and devices interact with each other and their surroundings. Our mission is to provide innovative silicon and software platforms to successfully enable our customers to develop products that fundamentally change the end-user experience. Specifically, we are a fabless semiconductor company that develops a full stack platform for artificial intelligence or AI, voice and sensor processing. The platform is based on our embedded FPGA("eFPGA") intellectual property ("IP"), low power, multi-core semiconductor system-on-chips ("SoCs"), discrete FPGAs, and AI software. Our customers can use our eFPGA IP for hardware acceleration and pre-processing in their own custom semiconductor devices, our SoCs to run our customer's software and build their hardware around, and our discrete FPGAs to implement their custom functionality. The Analytics Toolkit from SensiML Corporation ("SensiML") our wholly-owned subsidiary, provides an end-to-end Artificial Intelligence / Machine Learning solution with accurate sensor algorithms using AI technology. The full range of platforms, software tools and eFPGA IP enables the practical and efficient adoption of AI, voice and sensor processing across Consumer/Industrial IoT, Consumer Electronics, Military, Aerospace and Defense markets.

Our new products include our ArcticPro™, EOS™, QuickAI™, SensiML Analytics Toolkit, ArcticLink® III, PolarPro®3, PolarPro II, PolarPro, and Eclipse II products (which together comprise our new product category). Our mature products include primarily FPGA families named pASIC®3 and QuickRAM® as well as programming hardware and design software. In addition to delivering our own semiconductor solutions, we have an IP business that licenses our eFPGA technology for use in other semiconductor companies SoCs. We began delivering our eFPGA IP product ArcticPro in 2017, which is included in the new product revenue category along with subsequent families of our eFPGA IP. Through the acquisition of SensiML, we now have an AI software platform that includes Software-as-a-Service (SaaS) subscriptions for development, per unit license fees when deployed in production, and proof-of-concept services, all of which are also included in the new product revenue category.

Our solutions typically fall into one of four categories: Sensor Processing, eFPGA IP and its associated Tools, Display and Smart Connectivity. Our solutions include a unique combination of our silicon platforms, IP cores, software drivers, and in some cases, firmware and application software. All of our silicon platforms are standard devices and must be programmed to be effective in a system.

Through the acquisition of SensiML, in January 2019, our core IP also expanded to include the SensiML Analytics Toolkit that enables Original Equipment Manufacturers ("OEMs") to develop AI software for a broad array of resource-constrained time-series sensor endpoint applications. These include a wide range of consumer and industrial sensing applications.

We collaborate with multiple partners on reference designs, and in some cases, co-marketing and/or co-selling initiatives. QuickLogic also works with processor manufacturers, sensor manufacturers, and voice recognition, sensor fusion and context awareness algorithm developers, and embedded systems companies in the development of reference designs. Through reference designs that incorporate our solutions, we believe processor manufacturers, sensor manufacturers, and sensor and voice algorithm companies can expand the available market for their respective products. Furthermore, should a solution developed for a processor manufacturer or sensor and/or sensor algorithm company be applicable to a set of common OEMs or Original Design Manufacturers ("ODMs") we can amortize our Research and Development ("R&D") investment over that set of OEMs. There may also be cases when platform providers that intend to use always-on voice recognition will dictate certain performance requirements for the combined software/hardware solution before the platform provider certifies and/or qualifies our product for use by end customers.

SensiML collaborates with several microcontroller and sensors manufacturers to integrate the microcontroller and/or sensor manufacturers' development kits with SensiML's Analytics Toolkit in order to showcase combined solutions for AI/ML applications. Currently, these collaborations include Infineon, onsemi, Microchip Technology, Silicon Labs, ST Microelectronics, Arduino, NXP, Raspberry Pi, and Nordic Semiconductor.

We have changed our manufacturing strategies to reduce the cost of our silicon solution platforms to enable their use in high volume, mass customization products. Our EOS S3, EOS S3AI, QuickAI and ArcticLink III silicon platforms combine mixed signal physical functions and hard-wired logic alongside programmable logic. Our EOS S3, EOS S3AI and ArcticLink III solution platforms are manufactured on an advanced process node where we can benefit from smaller die sizes. We typically implement sophisticated logic blocks and mixed signal functions in hard-wired logic because it is very cost-effective and energy efficient. We use small form factor packages, which are less expensive to manufacture and include smaller pin counts. Reduced pin counts result in lower costs for our customer's printed circuit board space and routing. Furthermore, our SRAM reprogrammable silicon platforms can be programmed in-system by our customers, and therefore we do not incur programming cost, lowering the overall cost of ownership to our customers. We expect to continue to invest in silicon solution platforms and manufacturing technologies that make us competitive for the variety of markets and applications that programmable logic serves.

Our eFPGA IP are currently developed on 250nm, 130nm, 90nm, 65nm, 40nm, 28nm and 22nm process nodes. The licensable IP is generated by an automated compiler tool, called Australis™, that enables our engineers to create an eFPGA IP for our licensees that they can then integrate into their SoC without significant involvement by QuickLogic. We believe this flow enables a scalable development and support model for QuickLogic. For our eFPGA strategy, we typically work with semiconductor manufacturing partners prior to this IP being licensed to an SoC company.

In order to grow our revenue from its current level, we depend upon increased revenue from our new products including existing new product platforms, eFPGA IP and platforms currently in development. We expect our business growth to be driven mainly by our silicon solutions, eFPGA IP and SensiML AI Software. Therefore, our revenue growth needs to be strong enough to enable us to sustain profitability while we continue to invest in the development, sales and marketing of our new solution platforms, IP and software.

COVID-19 - Impact on Business

On January 30, 2020, the World Health Organization ("WHO") declared a global emergency due to the COVID-19 pandemic, and on February 28, 2020, the WHO raised its assessment of the threat from high to very high at a global level. The social and economic impact of the COVID-19 outbreak has continued to increase exponentially since this declaration. The outbreak has resulted in significant governmental measures being implemented to control the spread of COVID-19 and countries across the world continue to manage repeated waves of the pandemic, including variant strains of COVID-19 amid increasing, yet uneven progress toward vaccination. Restrictions on travel, business operations and the movement of people in many regions of the world in which the Company operates, and the imposition of shelter-in-place or similarly restrictive work-from-home orders have impacted many of the Company's offices and employees, including those located in the United States. As a result, the Company has temporarily closed or substantially limited the presence of personnel in its offices in several impacted locations, implemented travel restrictions and withdrawn from various industry events. The Company has also experienced some disruption and delays in its supply chain, customer deployment plans, and logistics challenges, including certain limitations on its ability to access customer fulfillment and service sites.

As such, while COVID-19 has had an impact on the Company's financial results for the twelve months ended January 2, 2022, and the period from March 20, 2020 to January 3, 2021, the COVID-19 pandemic and its potential effects on the Company's business in subsequent periods remains dynamic, and the broader implications for its business and future results of operations remain uncertain and cannot be predicted. These implications could include further disruptions or restrictions on the Company's ability to source, manufacture or distribute its products, including temporary disruptions to the facilities of its contract manufacturers in China, Taiwan, Philippines and Singapore, or the facilities of its suppliers and their contract manufacturers globally. Additionally, multiple countries have imposed and may further impose restrictions on business operations and movement of people and products to limit the spread of COVID-19. Delays in production or delivery of components or raw materials that are part of the Company's global supply chain due to restrictions imposed to limit the spread of COVID-19 could delay or inhibit its ability to obtain the supply of components and finished goods. If COVID-19 becomes more prevalent in the locations where the Company, its customers or suppliers conduct business, or the Company experiences more pronounced disruptions in its operations, the Company may experience constrained supply or curtailed demand that may materially adversely impact its business and results of operations. In addition, any other widespread health crisis that could adversely affect global and regional economies, financial markets and overall demand environment for the Company's products could have a material adverse effect on the Company's business, cash flows or results of operations. It is difficult to accurately predict the full impact that COVID-19 will have on the Company's future results from operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic and related containment measures. The Company will continue to closely monitor the pandemic's associated effects on all aspects of the business.

Available Information

Our corporate headquarters are located at 2220 Lundy Avenue, San Jose, California 95131. We can be reached at (408) 990-4000, and our website address is *www.quicklogic.com*. The information on our website is not incorporated herein by reference and is not a part of this Form 10-K. Our common stock trades on the Nasdaq under the symbol "QUIK." Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to such reports are available, free of charge, on our website home page as soon as reasonably practicable after we electronically file such materials with, or furnish them to, the Securities and Exchange Commission, or SEC. Copies of the materials filed by the Company with the SEC are also available on the SEC's website at *www.sec.gov*. A copy of our Code of Conduct and Ethics is posted on our website at https://ir.quicklogic.com/governance-docs. Any changes to or waiver from this *Code of Conduct and Ethics* will be posted to this page on our website.

Fiscal Year

Our fiscal year ends on the Sunday closest to December 31. References to fiscal years 2021, 2020 and 2019 refer to the fiscal years ended January 2, 2022, January 3, 2021 and December 29, 2019, respectively.

Industry Background

Internet-of-Things ("IoT") products are a strong growth market for semiconductor products, programmable logic, and AI/ML software, and the needs of this market bring a unique set of requirements. Three important trends in this market are (i) proliferation of devices at the edge of the network connected via a wireless network, (ii) an increasing adoption of sensors, and (iii) desire to increase processing efficiency as a means to lower power consumption and increase battery life. The trends to add more sensors to these connected devices is driven from the desire to enable more intelligence in these devices so that they can operate without continuously sending raw data back to a cloud-based infrastructure; sending metadata in lieu of raw data is more efficient for cost and power consumption, and is generally viewed as more secure. Creating metadata from raw data requires more processing capability in the sensor-enabled hardware as well as sophisticated software.

Historically, processing capability was built using a homogenous architecture, meaning, one that consisted of the use of only one type of technology. This could be one or more instances of a single processor type, or only programmable logic. More recently, there is a general trend in the semiconductor market that enhanced processing capability can come from the adoption of more heterogeneous architectures. Examples of this trend are the inclusion of one or more general purpose processor cores (e.g. Arm or RISC-V) in conjunction with programmable logic. This type of architecture enables the end user to partition their application workloads across the heterogeneous cores so that the most appropriate core is used for a given workload, often concurrently. Generally, this is viewed as the most optimal way to design systems that need to optimize for performance or battery life.

Another important trend is shrinking product life cycles. This drives a need for faster and lower risk product development. There is intense pressure on the bill of materials("BOM") cost of these devices, including per unit component costs and non-recurring development costs. As more people experience the advantages of a mobile lifestyle at home, they demand the same advantages in their professional lives. We believe that the trend toward mobile, battery-powered products that provide more intelligent insights from onboard sensors, small form factor and maximize battery life will be prominent in the computing, industrial, medical and military markets.

We believe these industry trends are shifting the demand among different classes of core silicon. The following are the four main classes of non-memory core silicon:

- Microcontrollers ("MCUs") are typically small, low-power devices on a single integrated circuit that contain a processor core, memory and a number of peripherals. They are designed to be programmed with software for embedded applications;
- Application Specific Standard Products ("ASSPs") other than processors, are fixed function devices designed to address a relatively narrow set of applications. These devices typically integrate a number of common peripherals or functions and the functionality of these devices is fixed prior to wafer fabrication;
- Programmable Logic Devices ("PLDs") are general-purpose devices, which can be used by a variety of electronic systems manufacturers and are customized after purchase for a specific application. FPGAs are a subset of PLDs and are typically used to implement complex system functions; and
- Application Specific Integrated Circuits ("ASICs"), are custom devices designed and fabricated to meet the needs of one specific application for one end-customer. Structured ASICs, a sub-category of ASICs, provide a limited amount of custom content to broaden the applicability of a device for additional applications.

ASSPs are offered broadly to the market, making it challenging for a system designer to create differentiated products from these devices alone. In many situations, the available ASSPs may not directly implement the desired function and the system designer is required to use a combination of ASSPs to achieve the desired result at the expense of increased cost, product size and power consumption. As standards evolve or new standards are developed, ASSPs may not be available to implement desired functions.

System designers can customize their products using programmable logic ASICs or MCUs. The competitive dynamic between these classes of core silicon are well understood. High development risks, development costs and opportunity costs are incurred when using ASICs to produce custom devices with very low unit production cost. Suppliers of programmable logic devices, which have lower development and market risks and development costs relative to ASICs, have aggressively reduced the unit cost of their products over time, making programmable logic devices the solution of choice for custom products unless the volume is very high. These cost reduction efforts have significantly increased the volume required to justify the total cost of an ASIC.

IoT devices (both Consumer and Industrial) incorporate complex, rapidly changing technology, require rapid product proliferation, and have varying product life and development cycles. Therefore, most IoT designers design their products from a base platform, or reference design, provided to them by the vendor of the processor they have selected for their design. To differentiate their products from their competition, OEMs and ODMs may require some level of customization at either the hardware or software level. Designers have only a few viable options to modify the base platform for their needs. Since IoT system designers often require very low power consumption to maximize battery life in their applications, the high power consumption of conventional FPGAs is incompatible with their design goals. This effectively limits the average battery-powered system designer to ASSPs, small PLDs, mobile-oriented FPGAs, and MCUs to create a virtual level playing field among battery-powered system designers and makes product proliferation and differentiation extremely hard to achieve. ASICs with their long development cycles, long lead times and high non-recurring development costs are only used in very high volume mainstream consumer products.

The traditional defense and industrial markets are well served by existing core silicon or custom ASIC development. Much of this market's uses are generally not as price, power and size sensitive. When there is a strong need for a custom solution in high volume applications, designers turn to an ASIC and, in low to medium volume applications, they use FPGAs. QuickLogic FPGAs have a loyal following in certain segments of these markets, particularly when instant-on, energy efficiency, high reliability or intellectual property security is important. QuickLogic has also entered into eFPGA-related agreements with customers in the defense market and expects to continue to do so in the future. Historically, the defense market has followed QuickLogic's mature product revenue trend, but recent advancements in QuickLogic's Australis IP generator tool and participation in the DARPA Toolbox, have enabled renewed interest from customers in this area. Consequently, QuickLogic expects these trends to result in higher growth.

Markets and Product Technology

We market our solutions primarily to IoT device OEMs and ODMs and Defense contractors. We have complete solutions incorporating our silicon platforms, IPs, software drivers, SensiML Analytics Toolkit and our system architecture expertise. A solution can be based on our programmable technology, which enables customized designs, low power, flexibility, rapid time-to-market, longer time-in-market and lower total cost of ownership. We are capable of providing complete solutions because of our investment in developing the low power IP and software required to implement specific functions, along with sensor software algorithms optimized for our architecture. In some cases, we develop the IPs and either software or firmware ourselves and, in other cases, we utilize third parties to develop the mixed signal physical layers, logic and/or software.

We market our solutions to OEMs and ODMs offering differentiated IoT products, to processor vendors wishing to expand their served available market, and to sensor manufacturers and sensor processing software companies wishing to expand their ecosystems. Our target markets include Consumer/Industrial IoT, Consumer Electronics, Military, Aerospace and Defense. Our solutions typically fall into one of four categories: Sensor Processing, eFPGA IP and its associated Tools, Display or Smart Connectivity.

By using our silicon platforms, our IPs, our software, and our in-depth architecture knowledge, we can deliver energy efficient custom solutions that blend the benefits of traditional ASSPs with the flexibility, product proliferation, differentiation and low total cost of ownership advantages of programmable logic.

Our product technology consists of five major elements:

First, our programmable logic allows us to hardware customize our platforms. We have two distinct types of programmable logic. We have an SRAM-reprogrammable logic architecture that utilizes a standard CMOS-logic process to meet the specific needs of the sensor and I/O subsystems of IoT devices: very low standby power, low dynamic power, and in-system reprogrammable technology. Our SRAM-reprogrammable logic is the basis of our eFPGA IP License initiative, and is the logic used in our EOS S3, EOS S3 LV, and EOS S3AI products.

We also have our ViaLink programmable logic that uses proprietary and patented technology to meet the specific smart connectivity needs when the characteristics of non-volatility and instant-on, very low standby power, low dynamic power, small form factor, single chip solutions that power cycle easily and quickly are required. Hardware customization gives our devices the ability to execute key actions faster than software implementations, and at lower power.

Second, our ArcticLink and EOS S3, EOS S3 LV, and EOS S3AI platforms combine mixed signal physical functions, hard-wired logic and programmable logic on one device. Mixed signal capability supports the trend toward serial connectivity in IoT applications, where designers benefit from lower pin counts, simplified printed circuit board, or PCB, layouts, simplified PCB interconnect and reduced signal noise. Adding hard-wired IP enables us to deliver more logic at lower cost and lower power while the programmable logic allows us to provide solutions that can be rapidly customized to differentiate products, add features and reduce system development costs. This combination of mixed signal, hard-wired logic and programmable logic enables us to deliver low cost, small form factor solutions that can be customized for particular customer or market requirements while lowering the total cost of ownership.

Third, we develop and integrate innovative IP cores, intelligent data processing IP cores, or standard interfaces used in IoT products. In addition to standards-based IP, we also offer proprietary IP such as:

- *Sensor Processing IPs* such as Flexible Fusion Engine, or FFE, Sensor Manager, or Communications Manager;

- *Hardware Acceleration / Processor Offloading IPs such as various digital filter and matrix multiplication functions.*

Fourth, we develop and optimize a software framework for use in conjunction with our sensor processing silicon platforms.

Fifth, through SensiML, we develop and optimize an end-to-end software suite that provides developers a practical means for developing IoT sensor algorithms using AI. Each component of the software suite handles specific steps to progress from initial raw sensor data collection using prototype hardware to optimized firmware code generation, validation and testing, and post-ship algorithm updates and continuous learning enhancements. SensiML Data Capture Lab is a full-featured client tool that enables rapid, efficient, and collaborative multi-user data collection, cleansing, labeling, and metadata annotation of custom application datasets. SensiML Analytics Studio is a cloud service component that uses labeled datasets to deliver device-optimized firmware for a chosen endpoint product. SensiML Test App is used to quickly and efficiently validate final device firmware and test for the proper behavior, accuracy, and performance of the algorithm empirically on actual endpoint hardware. Lastly, the SensiML Application Programmer's Interface ("API") is a simplified interface to extend the SensiML algorithms and manage advanced features like edge model tuning and continuous learning updates to the cloud.

Marketing, Sales and Customers

We monetize our technology through silicon sales, eFPGA IP license, and SensiML Analytics Toolkit subscriptions and per unit royalties. We specialize in enhancing the user experience in leading edge IoT devices and products. For our customers, we enable hardware and sensor algorithmic differentiation quickly, cost-effectively and at low power. For our partners, we expand their reach into new segments and new use cases thereby expanding the served available market for their existing devices.

Our vision is to transform the way people and devices interact with each other and their surroundings. Our mission is to provide innovative platforms to successfully enable our customers to develop products that fundamentally change the end-user experience. Specifically, we develop low power SoCs, FPGAs, embedded FPGA intellectual property and the SensiML Analytics Toolkit for AI Software. QuickLogic's products enable Consumer/Industrial IoT, Consumer Electronics, Military, Aerospace and Defense customers to deliver highly differentiated products with longer battery life.

Our multi-core sensor processing products such as ArcticLink 3 S1, ArcticLink 3 S2, EOS 3, EOS S3 LV, and EOS S3AI accomplish this result with general purpose and targeted cores, which provide an extremely power-efficient approach for real-time multi-modal (vision, motion, voice, location, biometric and environmental) sensor processing independently of the cloud. Our embedded FPGA technology gives SoC developers targeting IoT endpoint applications the flexibility to make design changes post-production while keeping power consumption low. Our SensiML Analytics Toolkit is cutting-edge software that enables ultra-low power IoT endpoints that implement AI to transform raw sensor data into meaningful insight at the device itself. The Toolkit also provides an end-to-end development platform spanning data collection, labeling, algorithm and firmware auto generation, and testing.

Market leading companies need to deliver new products quickly and cost-effectively. We believe our programmable technology allows us to deliver customizable solutions with low power consumption and high IP security, while meeting system performance and BOM cost requirements. We believe our solutions allow OEMs and ODMs to rapidly bring new and differentiated products to market quickly and cost-effectively. Our solutions enable energy and cost-efficient solutions on design platforms from which a range of products can be introduced.

We recognize that our markets require a range of solutions, and we intend to work with market leading companies to combine silicon solution platforms, packaging technology, sensor software algorithms, software drivers and firmware, to meet the product proliferation, high bandwidth, time-to-market, time-in-market and form factor requirements of IoT device manufacturers. We intend to continue to define and implement compelling solutions for our target customers and partners.

Our business model is targeted on ensuring our products are easy-to-use for the broad electronics market, particularly ones that are focused on enabling their products with AI solutions. This go-to-market strategy focuses on a broader sales and marketing approach. The IoT market for AI solutions is made up of hundreds, if not thousands, of individual customers. We have identified reference designs, evaluation systems and evaluation software kits that we can enable our channel sales partners to sell to these customers. We believe our solutions are resonating with our target customers who value the differentiated user experience, lower power consumption, platform design capability, rapid time-to-market, longer time-in-market and low total cost of ownership available through the use of our solutions.

We sell our products through a network of sales managers in North America, Europe and Asia. In addition to our corporate headquarters in San Jose, California, we have international sales operations in China, Japan, Taiwan, and the United Kingdom. Our sales personnel and independent sales representatives are responsible for sales and application support for a given region, focusing on major strategic accounts, and managing our channel sales partners such as distributors.

Our customers typically order our semiconductor device products through our distributors. Currently, we have two distributors in North America and a network of sixteen distributors and sales representative throughout Europe and Asia to support our international business. QuickLogic eFPGA IP customers and SensiML SaaS subscribers typically enter into licensing agreements directly with QuickLogic and SensiML, respectively.

We also have a military, industrial and IoT product customer base that purchases our mature silicon products. We expect to continue to offer silicon devices to these customers, as well as new eFPGA IP for when these customers choose to implement their own customer silicon.

Four customers represented approximately 22%, 16%, 14%, and 10% of our total revenue for the year endedJanuary 2, 2022 and three customers represented 19%, 16%, and 10% for the year ended January 3, 2021, respectively. In addition, a significant portion of our revenue comes from sales to customers located outside of the United States. See Note 14 to the Consolidated Financial Statements for information on our revenue by geography, market segment and key customers.

In the past, there has not been a predictable seasonal pattern to our business. However, we may experience seasonal patterns in the future due to global economic conditions, the overall volatility of the semiconductor industry and the inherent seasonality of the consumer markets.

Backlog

We do not believe that backlog as of any particular date is indicative of future results. A majority of our quarterly shipments typically are booked during the quarter. Our sales are made primarily pursuant to standard purchase orders issued by OEM customers and distributors.

Competition

A number of companies offer products that compete with one or more of our semiconductor products and solutions. Our semiconductor competitors include: (i) suppliers of ASSPs such as divisions of Synaptics, formerly known as the DSP Group; (ii) suppliers of application processors; (iii) suppliers of ASICs; (iv) suppliers of low density FPGAs such as Lattice and MicroSemi (a subsidiary of Microchip Technology); and (v) suppliers of low power microcontrollers such as ST Microelectronics and NXP. Our existing competitors for conventional FPGAs include suppliers of low power CPLDs and FPGAs such as Lattice, Xilinx, Intel and MicroSemi

ASSPs offer proven functionality which reduces development time, risk and cost, but it is difficult to offer a differentiated product using standard devices, and ASSPs that meet the system design objectives are not always available. Conventional programmable logic may be used to create custom functions that provide product differentiation or make up for deficiencies in available ASSPs. PLDs require more designer input since the designer has to develop and integrate the IP and may have to develop the software to drive the IP. PLDs are more expensive and consume more power than ASSPs or ASICs, but they offer fast time-to-market and are typically reprogrammable. OEMs have adopted mobile-oriented FPGAs in the IoT product market, but offer very little in terms of hard logic blocks that may decrease power consumption or selling price to the OEM. ASICs have a large development cost and risk and a long time to market. As a result, ASICs are generally only used for single designs with very high volumes. MCUs offer extensive software flexibility, but often do not offer sensor software algorithms, the lowest power, nor any hardware flexibility. Our solutions enable custom functions and system designs with fast time-to-market and longer time-in-market since they are customized by us using our solution platforms that contain programmable logic. In addition, because they are complete solutions, they reduce the system development cost and risk.

Since the AI software market is nascent, particularly for the edge and endpoint applications, the SensiML competitors tend to be venture-backed startups such as Edge Impulse.

Competitors for our eFPGA IP license product include a few startup companies.

Research and Development

We are focused on developing our solutions and platforms. Our solutions combine our silicon platforms with our IPs, software drivers, and other system software, and may include SensiML software for AI applications. Our future success will depend largely on our ability to rapidly develop, enhance and introduce our platform solutions that meet emerging industry standards and satisfy changing customer requirements. We have made and expect to continue to make substantial investments in research and development. Our research and development expenses for the years ended January 2, 2022, January 3, 2021 and December 29, 2019 were $6.9 million (55%of revenue), $7.5 million (87% of revenue), and 12.4 million (120% of revenue), respectively. Our research and development expenses for the year ended January 2, 2022 and January 3, 2021 included the expenses of SensiML Corporation.

As of January 2, 2022, our research and development staff consist of 20 employees located in California, India, and Oregon.

- Our system software group creates the drivers and other system code required to connect our silicon devices to Application Processors, drivers and microcode to support our sensor hubs.
- Our platform engineering group develops low power programmable devices and system IP that can be used in standalone solution platforms such as PolarPro 3E, or combined in solution platforms such as EOS S3.
- Our electronic design and automation ("EDA") software group collaborates with the open source software community to ensure the design libraries, interface routines and place and route software that allow our customer to take their own designs and target them to programmable devices, and develops the design tools that support algorithm development for our sensor hubs.
- Our hardware group develops and verifies IP Blocks that can be programmed into our programmable logic and develops primarily open source hardware reference designs to showcase and verify our solutions.
- Our product engineering group oversees product manufacturing and process development with our third-party foundries, and is involved in ongoing process improvements to increase yields and optimize device characteristics.
- The office of the CTO investigates future trends and requirements in order to define the next generation of solutions and platforms.
- Our SensiML group develops and maintains all software with respect to the SensiML Analytics Software Suite.

Manufacturing

We have close relationships with third-party manufacturers for our wafer fabrication, package assembly, and testing requirements to help us ensure stability in the supply of our products and to allow us to focus our internal efforts on product and solution design and sales.

We currently outsource our wafer manufacturing, primarily to GLOBALFOUNDRIES and Taiwan Semiconductor Manufacturing Company Limited ("TSMC"). We outsource our product packaging primarily to Amkor Technology, Inc. and STATS-ChipPAC. GLOBALFOUNDRIES manufactures our EOS S3, EOS S3 LV, and EOS S3AI Sensor Platform in a 40 nm CMOS process, and PolarPro 3E, ArcticLink III VX and BX, and ArcticLink 3 S2 Sensor Hub, in a 65 nm CMOS process. TSMC manufactures our pASIC 3, QuickRAM and certain QuickPCI products, using a 0.35 micron complementary metal oxide semiconductor, or CMOS, process. TSMC also manufactures our Eclipse products on 0.25 micron CMOS process, and other mature products using a 65nm CMOS process on twelve-inch wafers. We purchase products from GLOBALFOUNDRIES, and TSMC on a purchase order basis.

Outsourcing of wafer manufacturing enables us to take advantage of the high volume economies of scale offered by these suppliers. We may establish additional foundry relationships as such arrangements become economically useful or technically necessary.

Employees and Human Capital

As of January 2, 2022, we had 48 employees worldwide. We believe our future success depends in part on our continued ability to attract, hire and retain qualified personnel. None of our employees are represented by a labor union and we believe our employee relations are favorable. We recognize that in order to drive innovation and operational excellence, we must attract, develop, motivate and retain highly qualified talent. The well-being of employees is a key priority and includes a dynamic and welcoming workplace that promotes inclusive diversity, fosters collaboration and encourages employees to bring their best ideas to work every day, and promotes work-life balance. The principal purposes of our equity and cash incentive plans are to attract, retain and reward personnel through the granting of stock-based and cash-based compensation awards, in order to increase shareholder value and the success of our company by motivating such individuals to perform to the best of their abilities and achieve our objectives.

Intellectual Property

We believe that it is important to maintain a large patent portfolio to protect our innovations. We currently hold eighteen active U.S. patents and have one pending applications for an additional U.S. patent. Our patents contain claims covering various aspects of programmable integrated circuits, programmable interconnect structures and programmable metal devices. In Europe and Asia, we hold three patents and have two pending applications. Our issued patents expire between 2023 and 2039.

In most cases, revenue will decline from a decrease in demand for our mature products long before the expiration of pending or issued patents relating to the underlying technology in such products. The decision to cease maintaining a patent is made based on the importance of the patent in our current or future product offerings.

We have six registered trademarks and one pending trademark with the U.S. Patent and Trademark Office.

Information About Our Executive Officers and Directors

Our executive officers are appointed by, and serve at the discretion of, our Board of Directors. There are no family relationships among our directors and officers.

The following table sets forth certain information concerning our current executive officers and directors as of March 14, 2022:

Name	Age	Position
Brian C. Faith	47	President and Chief Executive Officer; Director
Elias Nader	57	Chief Financial Officer and Senior Vice President (SVP) of Finance
Rajiv Jain	61	Vice President, Worldwide Operations
Timothy Saxe	65	Senior Vice President Engineering and Chief Technology Officer
Michael R. Farese	75	Chairman of the Board
Joyce Kim	51	Director
Radhika Krishnan	51	Director
Andrew J. Pease	71	Director
Arturo Krueger	82	Director
Daniel A. Rabinovitsj	57	Director
Christine Russell	72	Director
Gary H. Tauss	67	Director

Brian C. Faith joined QuickLogic in June 1996. Mr. Faith has served as our President and Chief Executive Officer since June 2016 after having served as Vice President of Worldwide Marketing and Vice President of Worldwide Sales & Marketing between 2008 and 2016. Mr. Faith during the last 25 years has held a variety of managerial and executive leadership positions in engineering, product line management, marketing and sales. Mr. Faith has also served as the board member of the Global Semiconductor Alliance (GSA), the Chairman of the Marketing Committee for the CE-ATA Organization. He holds a B.S. degree in Computer Engineering from Santa Clara University and was an Adjunct Lecturer at Santa Clara University for Programmable Logic courses.

Elias Nader joined QuickLogic on February 1, 2022, Mr. Nader brings more than 30 years of experience in semiconductors and related industries, including 20 years in senior leadership positions. Prior to joining QuickLogic, Mr. Nader most recently served as Senior Vice President and Chief Financial officer at Pixelworks, Inc., where he was directly responsible for all of G&A worldwide and worked directly with the Board of Directors to provide strategic and operational direction to the company. Prior to that, Mr. Nader worked at Sigma Designs, Inc. as the Senior Vice President, Chief Financial Officer and Corporate Secretary. Mr. Nader has also served in executive capacities at Imperial Jet and Dionex Corporation. Mr. Nader holds a Bachelor of Science Degree in Accounting and Bachelor of Arts Degree in Economics and an MBA in International Business from San Jose State University.

Rajiv Jain joined QuickLogic in August 1992. Mr. Jain has served as our Vice President of Worldwide Operations since April 2014. Prior to this role, Mr. Jain served as QuickLogic's Senior Director of Operations and Development Engineering from 2011 to 2014, Senior Director of System Solutions and Process Technology from 2009 to 2011, Director of Process Technology from 1997 to 2009, and Senior Process Technologist from 1992 to 1997. Prior to joining QuickLogic, Mr. Jain was a Senior Yield Engineer at National Semiconductor from 1991 to 1992, where he focused on BiCMOS product yield improvements, and at Monolithic Memories from 1985 to 1988, where he focused on BiPolar product yield and engineering wafer sort improvements. Mr. Jain holds a Master's degree in Chemical Engineering from the University of California, Berkeley and a B.S. degree in Chemical Engineering from the University of Illinois, Champaign/Urbana.

Timothy Saxe (Ph.D.) joined QuickLogic in May 2001. Dr. Saxe has served as our Senior Vice President of Engineering and Chief Technology Officer since August 2016 and Senior Vice President and Chief Technology Officer since November 2008. Previously, Dr. Saxe has held a variety of executive leadership positions in QuickLogic including Vice President of Engineering and Vice President of Software Engineering. Dr. Saxe was Vice President of FLASH Engineering at Actel Corporation, a semiconductor manufacturing company, from November 2000 to February 2001. Dr. Saxe joined GateField Corporation, a design verification tools and services company formerly known as Zycad, in June 1983 and was a founder of their semiconductor manufacturing division in 1993. Dr. Saxe became GateField's Chief Executive Officer in February 1999 and served in that capacity until Actel Corporation acquired GateField in November 2000. Dr. Saxe holds a B.S.E.E. degree from North Carolina State University, and an M.S.E.E. degree and a Ph.D. in Electrical Engineering from Stanford University.

Information regarding the backgrounds of our directors is incorporated by reference from our definitive Proxy Statement relating to the 2022 Annual Meeting of Stockholders, which Proxy Statement is anticipated to be filed within 120 days after the end of the fiscal year covered by this Report.

ITEM 1A. RISK FACTORS

In addition to other information in this Annual Report on Form 10-K and in other filings we make with the Securities and Exchange Commission, the following risk factors should be carefully considered in evaluating our business as they may have a significant impact on our business, operating results and financial condition. If any of the following risks actually occurs, our business, financial condition, results of operations and future prospects could be materially and adversely affected. Because of the following factors, as well as other variables affecting our operating results, past financial performance should not be considered as a reliable indicator of future performance and investors should not use historical trends to anticipate results or trends in future periods.

Risk Factor Summary

Some of the factors that could materially and adversely affect our business, financially condition, results of operations and cash flows, but are not limited to, the following:

Risks Related to Our Business, Industry and Global and Economic Conditions

- *We have incurred losses in the past years. Although we are targeting to break even during the 2022 fiscal year, we may not be able to generate sufficient revenue or raise additional financing to fund future losses, and we may not be able to sustain sufficient liquidity, and as a result, our financial condition and operating results could be materially and adversely affected.*
- *The COVID-19 pandemic could have a material adverse effect on our business, cash flows and results of operations.*
- *We may be unable to accurately estimate quarterly revenue, which could adversely affect the trading price of our stock.*
- *Our future operating results are likely to fluctuate and therefore may fail to meet expectations, which could cause our stock price to decline.*
- *Cyberattacks through security vulnerabilities could lead to disruption of business, reduced revenue, increased costs, liability claims, or harm to our reputation or competitive position.*

Risk Related to Our Products

- *If we fail to successfully develop, introduce and sell new products, eFPGA IP product, SensiML Software subscriptions/licenses, and other new solutions or if our design opportunities do not generate the revenue we expect, we may be unable to compete effectively in the future and our future gross margins and operating results will be lower.*
- *Two of our products target new unproven markets, and if these markets do not develop, or if our products do not meet their needs, the loss of or reduction in orders could adversely affect our revenue and harm our business financial condition, operating results and cash flows.*
- *If our AI products are not low touch, the cost of addressing the fragmented AI market will be high which will delay market penetration, result in reduced revenues or require increased expenses, any of which could adversely affect our revenue and harm our business financial condition, operating results and cash flows.*
- *Our products are subject to a lengthy sales cycle and our customers may cancel or change their product plans after we have expended substantial time and resources in the design of their products.*
- *If we fail to adequately forecast demand for our products, we may incur product shortages or excess product inventories.*

Risk Related to Our Customers and Partners

- *We currently depend on a limited number of significant customers, for a significant portion of our revenue and the loss of or reduction in orders from such significant customers could adversely affect our revenue and harm our business financial condition, operating results and cash flows.*
- *We depend upon partnering with other companies to offer voice, motion, and other solutions into our platform.*
- *We depend on our relationships with third parties to manufacture our new products.*
- *We depend upon third parties for silicon IP, detailed registered-transfer level, ("RTL"), design, physical design, verification and assembly of our silicon platforms and any failure to meet our requirements in a timely fashion may adversely affect our time to market and revenue.*
- *We depend upon partnering with other companies to develop IP, reference platforms, algorithm and system software.*
- *We depend upon third parties to fabricate, assemble, test and program our products, and to provide logistics services. Any problems at these third parties could adversely affect our business, results of operations and financial condition.*
- *We entered into informal partnerships with certain third parties for the development of solutions. Our business could be adversely affected if such informal partnerships fail to grow as we expected.*

Risks Related to Our Business, Industry and Global and Economic Conditions

We have incurred losses in the past years. Although we are targeting to break even during the 2022 fiscal year, we may not be able to generate sufficient revenue or raise additional financing to fund future losses, and we may not be able to sustain sufficient liquidity, and as a result, our financial condition and operating results could be materially and adversely affected.

We have experienced net losses in the past years and expect to experience losses in at least some of the fiscal quarters during 2022, as we continue to develop new products, applications and technologies. Our new products and products currently under development have been generating lower gross margin as a percentage of revenue than our mature products due to the markets that we have targeted and the larger order quantities associated with these applications. Whether we can achieve cash flow levels sufficient to support our operations cannot be accurately predicted, and our investment portfolio is subject to a degree of interest rate and liquidity risk. Unless such cash flow levels are achieved, in addition to the proceeds that we received inSeptember 2021 from the sale of our equity securities, and the credit line we may be able to draw down from Heritage Bank of Commerce, we may need to obtain additional funds through strategic divestiture, or sell debt or equity securities, or some combination thereof, to provide funding for our operations. Such additional funding may not be available on commercially reasonable terms, or at all.

If we are unable to generate sufficient sales from its new products or adequate funds are not available when needed, our liquidity, financial condition and operating results would be materially and adversely affected, and we may not be able to operate our business without significant changes in our operations or at all.

The COVID-19 pandemic could continue to have a material adverse effect on our business, cash flows and results of operations.

On January 30, 2020, the World Health Organization ("WHO") declared a global emergency due to the COVID-19 pandemic, and on February 28, 2020, the WHO raised its assessment of the threat from high to very high at a global level. The outbreak has resulted in significant governmental measures being implemented to control the spread of COVID-19, including, among others, restrictions on travel, business operations and the movement of people in many regions of the world in which the Company operates, and the imposition of shelter-in-place or similarly restrictive work-from-home orders impacting many of the Company's offices and employees, including those located in the United States.

As a result, the Company has temporarily closed or substantially limited the presence of personnel in its offices in several impacted locations, implemented travel restrictions and withdrawn from various industry events. The impact of the Company's work-from-home policy that was implemented to protect its global workforce has contributed to delays in certain operational processes, including its routine quarterly financial statement close process. The Company has also experienced some disruption and delays in its supply chain, customer deployment plans, and logistics challenges, including certain limitations on its ability to access customer fulfillment and service sites. The Company believes these conditions had an adverse impact on its revenue and results of operations for the twelve months of fiscal 2021 and the period from March 20, 2020 to January 3, 2021, and it expects these conditions to continue to have an adverse impact in future quarters during the 2022 fiscal year.

The COVID-19 pandemic and its potential effects on the Company's business in its fiscal 2022 remain dynamic, and the broader implications for its business and results of operations remain uncertain. These implications could include further disruptions or restrictions on the Company's ability to source, manufacture or distribute its products, including temporary disruptions to the facilities of its contract manufacturers in China, Taiwan, Philippines and Singapore, or the facilities of its suppliers and their contract manufacturers globally. Additionally, multiple countries have imposed and may further impose restrictions on business operations and movement of people and products to limit the spread of COVID-19. Delays in production or delivery of components or raw materials that are part of the Company's global supply chain due to restrictions imposed to limit the spread of COVID-19 could delay or inhibit its ability to obtain the supply of components and finished goods. If COVID-19 becomes more prevalent in the locations where the Company, its customers or suppliers conduct business, or the Company experiences more pronounced disruptions in its operations, the Company may experience constrained supply or curtailed demand that may materially adversely impact its business and results of operations. In addition, any other widespread health crisis that could adversely affect global and regional economies, financial markets and overall demand environment for the Company's products could have a material adverse effect on the Company's business, cash flows or results of operations.

We may be unable to accurately estimate quarterly revenue, which could adversely affect the trading price of our stock.

Due to our relatively long product delivery cycle and the inability of our customers in the rapidly evolving end markets to confirm product requirements on a timely basis, we may have low visibility to product demand or estimated revenue in any given quarter. If our customers cannot provide us with accurate delivery lead times, we may not be able to deliver product to our customers in a timely fashion. Furthermore, our ability to respond to increased demand is limited to inventories on hand or on order, the capacity available at our contract manufacturers and our capacity to program products to customer specifications. If we fail to accurately estimate customer demand, or if our available capacity is less than needed to meet customer demand, we may not be able to accurately estimate our quarterly revenue, which may have a material adverse effect on our results of operations and financial condition, and our stock price could be materially fluctuate as a result.

Our future operating results are likely to fluctuate and therefore may fail to meet expectations, which could cause our stock price to decline.

Our operating results have varied widely in the past and are likely to do so in the future. In addition, our past operating results may not be an indicator of future operating results.

Factors that could cause our operating results to fluctuate include, without limitation: (i) successful development and market acceptance of our products and solutions; (ii) our ability to accurately forecast product volumes and mix, and to respond to rapid changes in customer demand; (iii) changes in sales volume or expected sales volume, product mix, average selling prices or production variances that affect gross profit; (iv) the effect of end-of-life programs; (v) a significant change in sales to, or the collectability of accounts receivable from, our largest customers; (vi) our ability to adjust our product features, manufacturing capacity and costs in response to economic and competitive pressures; (vii) our reliance on subcontract manufacturers for product capacity, yield and quality; (viii) our competitors' product portfolio and product pricing policies; (ix) timely implementation of efficient manufacturing technologies; (x) errors in applying or changes in accounting and corporate governance rules; (xi) the issuance of equity compensation awards or changes in the terms of our stock plan or employee stock purchase plan; (xii) mergers or acquisitions; (xiii) the impact of import and export laws and regulations; (xiv) the cyclical nature of the semiconductor industry and general economic, market, political and social conditions in the countries where we sell our products and the related effect on our customers, distributors and suppliers; and (xv) our ability to obtain capital, debt financing and insurance on commercially reasonable terms, and allocations between our operating expenses and cost of sales. Although certain of these factors are out of our immediate control, unless we can anticipate and be prepared with contingency plans that respond to these factors, our business, results of operations and financial condition could be materially adversely affected, which could cause our stock price to significantly fluctuate or decline.

In particular, since we derived in 2021 and expect to continue to derive a noticeable portion of our revenue from China, our business development plans, results of operations and financial condition may be materially adversely affected by significant political, social and economic developments in China. A slowdown in economic growth in China, such as due to the outbreak of the COVID-19 virus could adversely impact our customers, prospective customers, suppliers, distributors and partners in China, which could have a material adverse effect on our results of the operations and financial condition. There is no guarantee that economic downturns, whether actual or perceived, any further decrease in economic growth rates or an otherwise uncertain economic outlook in China will not occur or persist in the future, that they will not be protracted or that governments will respond adequately to control and reverse such conditions, any of which could materially and adversely affect our business, financial condition and results of operations.

We may also encounter periods of industry wide semiconductor oversupply, resulting in pricing pressure, as well as undersupply, resulting in a risk that we could be unable to fulfill our customers' requirements. The semiconductor industry has historically been characterized by wide fluctuations in the demand for, and supply of, its products. These fluctuations have resulted in circumstances when supply of and demand for semiconductors has been widely out of balance. An industry wide semiconductor oversupply could result in severe downward pricing pressure from customers. In a market with undersupply of manufacturing capacity, we would have to compete with larger foundry and assembly customers for limited manufacturing resources. In such an environment, we may be unable to have our products manufactured in a timely manner, at a cost that generates adequate gross profit or in sufficient quantities. Since we outsource all of our manufacturing and generally have a single source of wafer supply, test, assembly and programming for our products, we are particularly vulnerable to such supply shortages and capacity limitations. As a result, we may be unable to fulfill orders and may lose customers. Any future industry wide oversupply or undersupply of semiconductors could therefore have a material adverse effect on our business, results of operations and financial condition.

We may be unable to successfully grow our business if we fail to compete effectively with others to attract and retain our executive officers, and other key management or technical personnel.

We believe our future success depends upon our ability to attract and retain highly competent personnel. Our employees are at-will and not subject to employment contracts. We could potentially lose the services of any of our senior management personnel at any time due to a variety of factors that could include, without limitation, death, incapacity, military service, personal issues, retirement, resignation or competing employers. Our ability to execute current plans could be adversely affected by such a loss. We may fail to attract and retain qualified technical, sales, marketing and managerial personnel required to continue to operate our business successfully. Personnel with the expertise necessary for our business are scarce and competition for personnel with proper skills is intense.

In addition, new hires frequently require extensive training before they achieve desired levels of productivity. Additionally, attrition in personnel can result from, among other things, changes related to acquisitions, retirement and disability. We may not be able to retain existing key technical, sales, marketing and managerial employees or be successful in attracting, developing or retaining other highly-qualified technical, sales, marketing and managerial personnel, particularly at such times in the future as we may need to fill a key position. If we are unable to continue to develop and retain existing executive officers or other key employees or are unsuccessful in attracting new highly-qualified employees, our financial condition, cash flows, and results of operations could be materially and adversely affected.

We may have increasing difficulty attracting and retaining qualified outside board members.

The directors and management of publicly traded corporations are increasingly concerned with the extent of their personal exposure to lawsuits and shareholder claims, as well as governmental and creditor claims that may be made against them in connection with their positions with publicly held companies. Outside directors are becoming increasingly concerned with the availability of directors' and officers' liability insurance to pay on a timely basis the costs incurred in defending shareholder claims. Directors' and officers' liability insurance is expensive and difficult to obtain. The SEC and the Nasdaq Capital Market have also imposed higher independence standards and certain special requirements on directors of public companies. Accordingly, it may become increasingly difficult to attract and retain qualified outside directors to serve on our board of directors.

Our company's global operations are subject to risks and uncertainties.

Most of our products are manufactured outside of the United States at manufacturing facilities operated by our suppliers in Asia and South Asia.

A significant portion of our total revenue comes from sales to customers located outside the United States. We anticipate that sales to customers located outside the United States will continue to represent a significant portion of our total revenue in future periods. In addition, most of our domestic customers sell their products outside of North America, thereby indirectly exposing us to risks associated with foreign commerce and economic instability. The Company continues to maintain overseas sales offices.

International operations are subject to certain risks inherent in conducting business outside the U.S., such as changes in currency exchange rates, tax laws, price and currency exchange controls, export and import restrictions, environmental regulations, protection of intellectual property rights, nationalization, expropriation and other governmental action. Accordingly, our operations and revenue are subject to a number of risks associated with foreign commerce, including the following: (i) staffing and managing foreign offices; (ii) managing foreign distributors; (iii) collecting amounts due; (iv) political and economic instability; (v) foreign currency exchange fluctuations; (vi) changes in tax laws, import and export regulations, tariffs and freight rates; (vii) timing and availability of export licenses; (viii) supplying products that meet local environmental regulations; and (ix) inadequate protection of intellectual property rights. In addition, we incur costs in foreign countries that may be difficult to reduce quickly because of employee related laws and practices in those foreign countries. Our global operations also may be adversely affected by political events and domestic or international terrorist events and hostilities. Current events, including potential disruption caused by the COVID-19 virus outbreak, the United Kingdom's exit from the European Union, potential changes in immigration policies and tax reform proposals, create a level of uncertainty for multi-national companies. As U.S. companies continue to expand globally, increased complexity exists due to the possibility of renegotiated trade deals, revised international tax law treaties, and changes to the U.S. corporate tax code. These uncertainties could have a material adverse effect on our business and our results of operations and financial condition. As we continue to expand our business globally, our success will depend, in part, on our ability to anticipate and effectively manage these and other risks.

The semiconductor business is subject to downward price pressure.

Historically, the market for our products has been characterized by declining selling prices. With the recent supply chain shortages and materials price increases, and we anticipate that our average selling prices will fluctuate in future periods, although the timing and amount of these fluctuations cannot be predicted with any certainty. The pricing pressure in the semiconductor industry in past years has been due to a large number of factors, many of which were not easily foreseeable, such as currency crisis, industry-wide excess manufacturing capacity, weak economic growth, the slowdown in capital spending that followed the "dot-com" collapse, the reduction in capital spending by telecom companies and satellite companies, and the effects of the terrorism since September 11, 2001. Similar to past years, recent unfavorable economic conditions have resulted in a tightening of the credit markets. If signs of improvement in the global economy do not progress as expected and global economic conditions worsen, we may experience a decline in our average selling prices. In addition, our competitors have in the past, and may again in the future, lower prices in order to increase their market share. Despite the recent industry-wide price increases being implemented, prices may reduce in the future as the supply chain becomes more normalized again. In that event, downward price pressure in the industry may harm our competitive position and materially and adversely affect our financial condition, cash flows, and results of operations.

We may not be able to achieve the anticipated synergies and benefits from business acquisitions.

Part of our business strategy is to acquire businesses that we believe can complement our current business activities, both financially and strategically. Acquisitions, involve many complexities, including, but not limited to, risks associated with the acquired business' past activities, difficulties in integrating personnel and human resource programs, integrating technology systems and other infrastructures under the Company's control, unanticipated expenses and liabilities, and the impact on our internal controls and compliance with the regulatory requirements under the Sarbanes-Oxley Act of 2002. There is no guarantee that our acquisitions will increase the profitability and cash flow of the Company, and our efforts could cause unforeseen complexities and additional cash outflows, including financial losses. As a result, the realization of anticipated synergies or benefits from acquisitions may be delayed or substantially reduced.

Litigation could adversely impact our consolidated financial position.

We have been and may be in the future involved in various litigation matters arising in the ordinary course of business, including, but not limited to, litigation relating to employment matters, commercial transactions, intellectual property matters, contracts, environmental matters and matters related to compliance with governmental regulations. Litigation is inherently uncertain and unpredictable. The potential risks and uncertainties include, but are not limited to, such factors as the costs and expenses of litigation and the time and attention required of management to attend to litigation. An unfavorable resolution of any particular legal claim or proceeding, and/or the costs and expenses incurred in connection with a legal claim or proceeding, could have a material and adverse effect on our results of operations and financial condition.

We may be unable to adequately protect our intellectual property rights and may face significant expenses as a result of future litigation.

Protection of intellectual property rights is crucial to our business, since that is how we keep others from copying our innovations and those of third parties that are central to our existing and future products. From time to time, we receive letters alleging patent infringement or inviting us to license other parties' patents. We evaluate these requests on a case-by-case basis. These situations may lead to litigation if we reject the offer to obtain the license.

In the past, we have been involved in litigation relating to our alleged infringement of third-party patents or other intellectual property rights. This type of litigation is expensive and consumes large amounts of management time and attention.

Because it is critical to our success that we continue to prevent competitors from copying our innovations, we intend to continue to seek patent and trade secret protection for our products. The process of seeking patent protection can be long and expensive, and we cannot be certain that any currently pending or future applications will actually result in issued patents or that, even if patents are issued, they will be of sufficient scope or strength to provide meaningful protection or any commercial advantage to us. Furthermore, others may develop technologies that are similar or superior to our technology or design around the patents we own. We also rely on trade secret protection for our technology, in part through confidentiality agreements with our employees, consultants and other third parties. However, these parties may breach these agreements and we may not have adequate remedies for any breach. In any case, others may come to know about or determine our trade secrets through a variety of methods. In addition, the laws of certain territories in which we develop, manufacture or sell our products may not protect our intellectual property rights to the same extent as the laws of the United States.

The market price of our common stock may fluctuate significantly and could lead to securities litigation.

Stock prices for many companies in the technology and emerging growth sectors have experienced wide fluctuations that have often been unrelated to the operating performance of such companies. In the past, securities class action litigation has often been brought against companies following periods of volatility in the market price of its securities. In the future, we may be the subject of similar litigation. Securities litigation could result in substantial costs and divert management's attention.

If we do not maintain compliance with the listing requirements of the Nasdaq Capital Market, our common stock could be delisted, which could, among other things, reduce the price of our common stock and the levels of liquidity available to our stockholders.

Our common stock was originally listed on the Nasdaq Global Market and was transferred to the Nasdaq Capital Market (the “Nasdaq”) on July 22, 2019. In order to maintain that listing, we must satisfy minimum financial and other continued listing requirements and standards, including those regarding director independence and independent committee requirements, minimum stockholders' equity, minimum share price, and certain corporate governance requirements.

There can be no assurances that we will be able to maintain compliance with the applicable listing standards of Nasdaq. In the event that our common stock is delisted from Nasdaq and is not eligible for quotation on another market or exchange, trading of our common stock could be conducted in the over-the-counter market or on an electronic bulletin board established for unlisted securities, such as the Pink Sheets or the OTC Markets. In such event, it could become more difficult to dispose of, or obtain accurate price quotations for, our common stock, and there would likely also be a reduction in our coverage by securities analysts and the news media, which could cause the price of our common stock to decline further. Also, it may be difficult for us to raise additional capital if we are not listed on a major exchange.

Our business is subject to political, economic and health risks, natural disasters and other catastrophic events, which could have a material adverse effect on our business operations.

Our operations and the operations of our suppliers are vulnerable to interruption by fire, earthquake, power loss, flood, terrorist acts and other catastrophic events beyond our control. In particular, our headquarters are located near earthquake fault lines in the San Francisco Bay Area. In addition, we rely on certain suppliers to manufacture our products and would not be able to qualify an alternate supplier of our products for several quarters. Our suppliers often hold significant quantities of our inventories, which, in the event of a disaster, could be destroyed. If there is an earthquake or other catastrophic even near our headquarters, our customers’ facilities, our distributors facilities or our suppliers’ facilities, our business could be seriously harmed.

In addition, any catastrophic event, such as the recent COVID-19 virus outbreak, the failure of our computer systems or networks, including due to computer viruses, security breaches, war or acts of terrorism, could significantly disrupt our operations. Specifically, any prolonged health threat globally could adversely affect the economies and financial markets of many countries, resulting in an economic downturn that could impact our operating results. The occurrence of any of these events could also affect our customers, distributors and suppliers and produce similar disruptive effects upon their business, which would likely impact our sales and cause a decline in our revenue.

We do not maintain sufficient business interruption and other insurance policies to compensate us for all losses that may occur. Any losses or damages incurred by us as a result of a catastrophic event or any other significant uninsured loss could have a material adverse effect on our business.

There may be some potential effects of system outages or data security breaches, which could adversely affect our operations, financial results or reputation.

We face risks from electrical or telecommunications outages, computer hacking or other general system failure. We rely heavily on our internal information and communications systems and on systems or support services from third parties to manage our operations efficiently and effectively. Any of these are subject to failure. System-wide or local failures that affect our information processing could have a material adverse effect on our business, financial condition, results of operations and cash flows. In addition, a system failure or data security breach could also result in the unintentional disclosure of confidential information about us, our customers or our employees, which could result in our incurring costs for remedial or preventative actions, damage our reputation with customers and reduce demand for our products and services. Further, insurance coverage does not generally protect from normal wear and tear, which can affect system performance. Any applicable insurance coverage for an occurrence could prove to be inadequate. Coverage may be or become unavailable or inapplicable to any risks then prevalent.

Cyberattacks through security vulnerabilities could lead to disruption of business, reduced revenue, increased costs, liability claims, or harm to our reputation or competitive position.

Security vulnerabilities may arise from our hardware, software, employees, contractors or policies we have deployed, which may result in external parties gaining access to our networks, datacenters, cloud datacenters, corporate computers, manufacturing systems, and or access to accounts we have at our suppliers, vendors, and customers. They may gain access to our data or our users’ or customers’ data or attack the networks causing denial of service or attempt to hold our data or systems in ransom. The vulnerability could be caused by inadequate account security practices such as failure to timely remove employee access when terminated. To mitigate these security issues, we have implemented measures throughout our organization, including firewalls, backups, encryption, employee information technology policies and user account policies. However, there can be no assurance these measures will be sufficient to avoid cyberattacks. If any of these types of security breaches were to occur and we were unable to protect sensitive data, our relationships with our business partners and customers could be materially damaged, our reputation could be materially harmed, and we could be exposed to a risk of litigation and possible significant liability.

Further, if we fail to adequately maintain our infrastructure, we may have outages and data loss. Excessive outages may affect our ability to timely and efficiently deliver products to customers or develop new products and solutions. Such disruptions and data loss may adversely impact our ability to fulfill orders, patent our intellectual property or protect our source code, and interrupt other processes. Delayed sales or lost customers resulting from these disruptions could adversely affect our financial results, stock price and reputation.

Effective May 25, 2018, the European Union ("EU") implemented the General Data Protection Regulation("GDPR") a broad data protection framework that expands the scope of current EU data protection law to non-European Union entities that process, or control the processing of, the personal information of EU subjects. The GDPR allows for the imposition of fines and corrective action on entities that improperly use or disclose the personal information of EU subjects, including through a data security breach. The State of California enacted the California Consumer Privacy Act of 2018 ("CCPA") effective on January 1, 2020, which contains requirements similar to GDPR for the handling of personal information of California residents, commencing on January 1, 2020. Additional security legislation and regulations are constantly being considered and any such laws enacted may have an adverse impact on our business if we are not able to comply or if compliance requires time and resources for implementation.

Our and our collaborators' and contractors' failure to fully comply with GDPR, CCPA and other laws could lead to significant fines and require onerous corrective action. In addition, data security breaches experienced by us, our collaborators or contractors could result in the loss of trade secrets or other intellectual property, public disclosure of sensitive commercial data, and the exposure of personally identifiable information (including sensitive personal information) of our employees, customers, collaborators and others.

Unauthorized use or disclosure of, or access to, any personal information maintained by us or on our behalf, whether through breach of our systems, breach of the systems of our suppliers or vendors by an unauthorized party, or through employee or contractor error, theft or misuse, or otherwise, could harm our business. If any such unauthorized use or disclosure of, or access to, such personal information was to occur, our operations could be seriously disrupted, and we could be subject to demands, claims and litigation by private parties, and investigations, related actions, and penalties by regulatory authorities. In addition, we could incur significant costs in notifying affected persons and entities and otherwise complying with the multitude of foreign, federal, state and local laws and regulations relating to the unauthorized access to, or use or disclosure of, personal information. Finally, any perceived or actual unauthorized access to, or use or disclosure of, such information could harm our reputation, substantially impair our ability to attract and retain customers and have an adverse impact on our business, financial condition and results of operations.

Our Certificate of Incorporation, Bylaws and Delaware law contain provisions that could discourage a takeover that is beneficial to stockholders.

Provisions of our Certificate of Incorporation, our Bylaws and Delaware law could have the effect of discouraging takeover attempts that certain stockholders might deem to be in their interest. These anti-takeover provisions may make us a less attractive target for a takeover bid or merger, potentially depriving shareholders of an opportunity to sell their shares of common stock at a premium over prevailing market prices as a result of a takeover bid or merger.

Changes to existing accounting pronouncements or taxation rules or practices may cause adverse revenue fluctuations, affect our reported financial results or how we conduct our business.

Generally accepted accounting principles in the United States ("GAAP") are promulgated by and are subject to the interpretation of the Financial Accounting Standards Board ("FASB") and the SEC. New accounting pronouncements or taxation rules and varying interpretations of accounting pronouncements or taxation practices have occurred and may occur in the future. Any future changes in accounting pronouncements or taxation rules or practices may have a significant effect on how we report our results and may even affect our reporting of transactions completed before the change is effective. In addition, a review of existing or prior accounting practices may result in a change in previously reported amounts. This change to existing rules, future changes, if any, or the questioning of current practices may adversely affect our reported financial results, our ability to remain listed on the Nasdaq, or the way we conduct our business and subject us to regulatory inquiries or litigation.

If, in the future, we conclude our internal control over financial reporting is not effective, investors could lose confidence in the reliability of our financial statements, which could result in a decrease in the value of our common stock.

As directed by Section 404 of the Sarbanes-Oxley Act of 2002, the SEC adopted rules requiring public companies to include a report of management on the companies' internal control over financial reporting in their annual reports on Form 10-K, including an assessment by management of the effectiveness of the filing company's internal control over financial reporting. In addition, the independent registered public accounting firm auditing a public company's financial statements must attest to the effectiveness of the Company's internal control over financial reporting. There is a risk that in the future we may identify internal control deficiencies that suggest that our controls are no longer effective. This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements, which could cause the market price of our common stock to decline and make it more difficult for us to finance our operations

Risks Related to Our Products

If we fail to successfully develop, introduce and sell new products, eFPGA IP product, SensiML Software subscriptions/licenses, and other new solutions or if our design opportunities do not generate the revenue we expect, we may be unable to compete effectively in the future and our future gross margins and operating results will be lower.

The market for differentiated consumer devices is highly competitive and dynamic, with short end market product life cycles and rapid obsolescence of existing products. To compete successfully, we must obtain access to advanced fabrication capacity and dedicate significant resources to specify, design, develop, manufacture and sell new or enhanced solutions that provide increasingly higher levels of performance, low power consumption, new features, meeting current and emerging industry standards, reliability and/or cost savings to our customers. Due to the short product life cycle of these devices, our revenue is subject to fluctuation in a short period of time and our ability to grow our business depends on accelerating our design win activity. We often make significant investments in solutions, sensor algorithm software and silicon platform development, selling and marketing, long before we generate revenue, if any, from our efforts. The markets we are targeting typically have higher volumes and greater price pressure than our traditional business. In addition, we quote opportunities in anticipation of future cost reductions and may aggressively price products to gain market share. In order to react quickly to opportunities or to obtain favorable wafer prices, we make significant investments in and commitments to purchase inventories and capital equipment before we have firm commitments from customers.

We expect our business growth to be driven do by new products, which currently include EOS™, Quick AI, SensiML, ArcticLink® III, PolarPro®3, PolarPro II, PolarPro, Eclipse II products. We also launched a business that licenses our FPGA technology for use in other semiconductor companies' SoCs and delivered our first eFPGA IP product ArcticPro™ in 2017. The new product revenue growth of our new products and eFPGA IP product needs to be strong enough to achieve profitability. The gross margin associated with our new products is generally lower than the gross margin of our mature products, due primarily to the price-sensitive nature of the higher volume IoT consumer opportunities that we are pursuing with new products and eFPGA IP product. Because the product life cycle of IoT products is short, we must replace revenue at the end of a product life cycle with sales from new design opportunities. While we expect revenue and gross profit growth from new products and eFPGA IP product will offset the expected decline in revenue and gross profit from our mature products, there is no assurance whether or when this will occur. In order to increase our revenue from its current level, we depend upon increased revenue from our existing new products, especially solutions based on our EOS S3, ArcticLink and PolarPro solution platforms, the eFPGA IP product and the development of additional new products and solutions.

If (i) we are unable to design, produce and sell new products, eFPGA IP, SensiML and other products and solutions that meet design specifications, address customer requirements and generate sufficient revenue and gross profit; (ii) market demand for our new products, eFPGA IP product and other products fails to materialize; (iii) we are unable to obtain adequate fabrication capacity on a timely basis; (iv) we are unable to develop new silicon platforms or solutions in a timely manner; or (v) our customers do not successfully introduce products incorporating our devices, or choose a competing offering, our revenue and gross margin of the new products and eFPGA IP product will be materially harmed, which could have an overall adverse and potentially disproportionate effect on our business, results of operations and financial condition.

Two of our products target new unproven markets, and if these markets do not develop, or if our products do not meet their needs, the loss of or reduction in orders could adversely affect our revenue and harm our business financial condition, operating results and cash flows.

eFPGA: We have history and experience in developing, selling and supporting FPGA products and incorporating FPGA IP developed by us into our platform solutions. The eFPGA market is a developing market with unknown requirements and demand. Our current FPGA architectures and their performance may not be a good fit for the eFPGA Market. eFPGA IP is designed for specific foundry/process node combinations, and the ones we have chosen to target may be different from what our customers require. The software developed by us for eFPGA may be delayed or may not meet the needs of the eFPGA Market. The support required by a customer to incorporate the eFPGA may be much higher than expected which may delay new engagements or lead to high costs. The incorporated eFPGA IP may have an unexpected result in the customer's chip leading to compensation demands. The expected NRE and royalty rates we expect to charge for the eFPGA may not be competitive, which may have a material adverse effect on our business, results of operations and financial condition.

SensiML: Mainstream AI runs on powerful processors and large FPGAs. SensiML's AI solution targets end point solutions that use low power processors. The end point AI market is a developing market with unknown requirements and demand. The current SensiML solution may not be a good fit to the evolving needs of the end-point AI market. The support required for customer evaluations and implementation may be higher than expected which may delay engagements and lead to higher costs. The expected SaaS licensing fees and royalty rates we expect to charge for the SensiML solutions may not be competitive, which may have a material adverse effect on our business, results of operations and financial condition.

If our AI products are not low touch, the cost of addressing the fragmented AI market will be high which will delay market penetration, result in reduced revenues or require increased expenses, any of which could adversely affect our revenue and harm our business financial condition, operating results and cash flows.

The end point AI market consists of many different use cases, with each individual use case having a modest volume even though the aggregate volume is large. This is quite different from the IoT consumer market which consists of a few large customers and use cases. In order to scale in the fragmented AI end point market, our products will have to be extremely low touch so that the cost of support is low and scalable across many customers. The current EOS S3AI solution and SensiML solutions may not be sufficiently low touch to address this market in a cost-effective manner, or in the volume required. Higher than expected costs, or lower than expected volume may have a material adverse effect on our business, results of operations and financial condition.

Our products are subject to a lengthy sales cycle and our customers may cancel or change their product plans after we have expended substantial time and resources in the design of their products.

Our customers often evaluate our products for six months or more before designing them into their systems, and they may not commence volume shipments for up to an additional six to twelve months, if at all. During this lengthy sales cycle, our potential customers may cancel or change their product plans. Customers may also discontinue products incorporating our devices at any time or they may choose to replace our products with lower cost semiconductors. In addition, we are working with leading customers in our target markets to define our future products. If customers cancel, reduce or delay product orders from us, or choose not to release products that incorporate our devices after we have spent substantial time and resources developing products or assisting customers with their product design, our revenue levels may be less than anticipated and our business, results of operations and financial condition may be materially adversely affected.

If we fail to adequately forecast demand for our products, we may incur product shortages or excess product inventories.

Our agreements with certain suppliers require us to provide forecasts of our anticipated manufacturing orders, and place binding manufacturing commitments in advance of receiving purchase orders from our customers. We are limited in our ability to increase or decrease our forecasts under such agreements. Other manufacturers supply us with product on a purchase order basis. The allocation of capacity is determined solely by our suppliers, over which we have no direct control. Additionally, we may place orders with our suppliers in advance of customer orders to allow us to quickly respond to changing customer demand or to obtain favorable product costs. Furthermore, we provide our suppliers with equipment that is used to program our products to customer specifications. The programming equipment is manufactured to our specifications and has significant order lead times. These factors may result in product shortages or excess product inventories. Obtaining additional supply in the face of product, programming equipment or capacity shortages may be costly, or not possible, especially in the short-term since most of our products and programming equipment are supplied by a single supplier. If we fail to adequately forecast demand for our products, our business, the relationship with our customers, our results of operations and financial condition could be materially adversely affected.

Our business could be adversely affected by undetected errors or defect in our products.

Difficulties encountered during the complex semiconductor manufacturing process can render a substantial percentage of semiconductor devices nonfunctional. New manufacturing techniques or fluctuations in the manufacturing process may change the performance distribution and yield of our products. We have, in the past, experienced manufacturing runs that have contained substantially reduced or no functioning devices, or that generated devices with below normal performance characteristics. Our reliance on third-party suppliers may extend the period of time required to analyze and correct these problems. Once corrected, our customers may be required to redesign or re-qualify their products. As a result, we may incur substantially higher manufacturing costs, shortages of inventories or reduced customer demand.

Yield fluctuations frequently occur in connection with the manufacture of newly introduced products, with changes in product architecture, with manufacturing at new facilities, on new fabrication processes or in conjunction with new backend manufacturing processes. Newly introduced solutions and products are often more complex and more difficult to produce, increasing the risk of manufacturing related defects. New manufacturing facilities or processes are often more complex and take a period of time to achieve expected quality levels and manufacturing efficiencies. While we test our products, including our software development tools, they may still contain errors or defects that are found after we have commenced commercial production. Undetected errors or defects may also result from new manufacturing processes or when new intellectual property is incorporated into our products. If our products or software development tools contain undetected or unresolved defects, we may lose market share, experience delays in or loss of market acceptance, reserve or scrap inventories or be required to issue a product recall. In addition, we would be at risk of product liability litigation if defects in our products were discovered. Although we attempt to limit our liability to end users through disclaimers of special, consequential and indirect damages and similar provisions, we cannot assure you that such limitations of liability will be legally enforceable.

We will be unable to compete effectively if we fail to anticipate product opportunities based upon emerging technologies and standards or fail to develop products and solutions that incorporate these technologies and standards in a timely manner.

We spend significant resources designing and developing silicon solution platforms, IP and software and reference designs, and adopting emerging technologies. We intend to develop additional products and solutions and to adopt new technologies in the future. If system manufacturers adopt alternative standards or technologies, if an industry standard or emerging technology that we have targeted fails to achieve broad market acceptance, if customers choose low power offerings from our competitors, or if we are unable to bring the technologies or solutions to market in a timely and cost-effective manner, we may be unable to generate significant revenue from our research and development efforts. As a result, our business, results of operations and financial condition could be materially adversely affected, and we may be required to write-off related inventories and long-lived assets.

Rising concern of international tariffs, including tariffs applied to goods traded between the United States and China,as well as potential export restrictions, could materially and adversely affect our business and results of operations.

Regulatory activity, such as enforcement of U.S. export control and sanctions laws, and the imposition of tariffs and export regulations, have in the past and may materially limit our ability to make sales to customers in China, which may harm our results of operations and financial condition. Since the beginning of 2018, there have been several rounds of U.S. tariffs on Chinese goods taking effect in 2018 and 2019, some of which prompted retaliatory Chinese tariffs on U.S. goods. Approximately $0.1 million, or approximately 1%, of our total revenue for the year ended January 2, 2022, approximately $0.1 million, or 1%, of our total revenue for the year ended January 3, 2021, and approximately $1.1 million, or 11%, of our total revenue for the year ended December 29, 2019, consisted of sales of our EOS S3 and FPGA products to both OEMs and ODMs in China.

The institution of trade tariffs both globally and between the U.S. and China specifically carries the risk of negatively affecting China's overall economic condition, which could have a negative impact on us as we derived and expect to continue to derive a significant amount of revenue from China. Further escalations of trade conflicts between the United States and China, or other countries where we have operations, may have a material adverse effect on our gross margin.

In addition to recent trade tariffs, if U.S. export controls expand to place new restrictions on the exportation of our products or a subset of our products, such controls could have a material adverse effect on our operating results. Moreover, concerns that U.S. companies may not be reliable suppliers may in the future cause some of our customers to replace our products in favor of products from other suppliers.

Imposition of tariffs or sustained export restrictions could cause a decrease in the sales of our products to customers located in China or other customers selling to Chinese end users, which would directly impact our business and operating results. Further, changes in United States trade policy could trigger retaliatory actions by affected countries, which could impose restrictions on our ability to do business in or with affected countries or prohibit, reduce, or discourage purchases of our products by foreign customers, leading to increased costs of products that contain our components, increased costs of manufacturing our products, and higher prices of our products in foreign markets. Changes in, and responses to, United States trade policy could reduce the competitiveness of our products and cause our sales and revenues to drop, which could materially and adversely impact our business and results of operations.

Exchange rate fluctuations could adversely affect our company's results of operations and financial condition.

We denominate sales of our products to foreign countries exclusively in U.S. dollars. As a result, any increase in the value of the U.S. dollar relative to the local currency of a foreign country will increase the price of our products in that country so that our products become relatively more expensive to customers in their local currency which may cause sales of our products in that foreign country to decline. If the local currency of a foreign country in which we conduct business strengthens against the U.S. dollar, our payroll and other local expenses will be higher, and since sales are transacted in U.S. dollars, would not be offset by any increase in revenue. To the extent any such risks materialize, our business, results of operations and financial condition could be materially adversely affected.

We have implemented import and export control procedures to comply with United States regulations but we are still exposed to potential risks from import and export activity.

Our products, solutions, technology and software are subject to import and export control laws and regulations, which, in some instances, may impose restrictions on business activities, or otherwise require licenses or other authorizations from agencies such as the U.S. Department of State, U.S. Department of Commerce and U.S. Department of the Treasury. These restrictions may impact deliveries to customers or limit development and manufacturing alternatives. We have import and export licensing and compliance procedures in place for purposes of conducting our business consistent with U.S. and applicable international laws and regulations, and we periodically review these procedures to maintain compliance with the requirements relating to import and export regulations. If we are not able to remain in compliance with import and export regulations, we might be subject to investigation, sanctions or penalties by regulatory authorities. Such penalties can include civil, criminal or administrative remedies such as loss of export privileges. We cannot be certain as to the outcome of an evaluation, investigation, inquiry or other action or the impact of these items on our operations. Any such action could adversely affect our financial results and the market price of our common stock.

Risks Related to Our Customers and Partners

We currently depend on a limited number of significant customers, for a significant portion of our revenue and the loss of or reduction in orders from such significant customers could adversely affect our revenue and harm our business financial condition, operating results and cash flows.

A small number of end-customers represented a significant portion our total revenue in our fiscal year ended January 2, 2022. During our fiscal year ended January 2, 2022, four customers accounted for 22%, 16%, 14%, and 10% respectively, of our total revenue. We expect this high level of customer concentration to reduce as we continue to market our solutions to customers in more fragmented IoT markets as well as Military, Aerospace and Defense customers. As in the past, future demand from these customers may fluctuate significantly from quarter to quarter. Customers typically order products with short, requested delivery lead times, and do not provide a commitment to purchase product past the period covered by purchase orders, which may be rescheduled or canceled. In addition, our manufacturing lead times are longer than the delivery lead times requested by these customers, and we make significant purchases of inventory and capital expenditures in anticipation of future demand. If revenue from any significant customer were to decline substantially, we may be unable to offset this decline with increased revenue and gross margin from other customers and we may purchase excess inventories. These factors could have a material adverse impact on our business, results of operations and financial condition.

We may make a significant investment in long-lived assets for the production of our products based upon historical and expected demand. If demand for our products or gross margin generated from our products does not meet our expectations or if we are unable to collect amounts due from significant customers, we may be required to write-off inventories, provide for uncollectible accounts receivable or incur charges against long-lived assets, which may have a material adverse effect on our business, results of operations and financial condition.

We depend upon partnering with other companies to offer voice, motion, and other solutions into our platform.

In addition to working directly with our customers, we partner with other companies that are experts in certain technologies to create more complete solutions. The depth of these relationships varies depending on the partner and the dynamics of the end market being targeted, but these relationships are typically a co-marketing relationship that includes joint account calls, promotional activities and/or engineering collaboration and developments. The propriety code provided by these partners may be an integral part of the solutions that we offer our customers. If we are unable to obtain competitive pricing (NRE, royalty) and prompt quality support by our partner, our solution may not be competitive. In addition, if the quality of our partner's solution does not meet our customer's requirements, it may delay or prevent the incorporation of our product by the customer. There may also be delays and additional expenses to improve or update the partner's solution to meet current market needs. If we are unable to maintain a close working relationship with our partners it would hinder our ability to continue to develop and introduce leading solutions effectively in the future, which may have a material adverse effect on our business, results of operations and financial condition.

We depend on our relationships with third parties to manufacture our new products.

We depend upon GLOBALFOUNDRIES, TSMC, Amkor and STATS-chipPAC to manufacture our new products. The inability of any one of these companies to continue manufacture of our new products for any reason would require us to identify and qualify a new foundry to manufacture our new products. This would be time consuming, difficult and result in unforeseen operational problems. Alternate foundries might not be available to fabricate our new products, or if available, might be unwilling or unable to offer services on acceptable terms and our ability to operate our business or deliver our products to our customers could be severely impaired.

We depend upon third parties for silicon IP, RTL, design, physical design, verification and assembly of our silicon platforms and any failure to meet our requirements in a timely fashion may adversely affect our time to market and revenue.

Our move to a variable cost or outsourced engineering development model allows us access to the best design resources for developing new silicon platforms. This includes access to leading edge silicon IP as well as RTL design and physical design expertise. However, outsourcing the design of a complex silicon platform typically involves multiple companies in multiple locations, which may increase the risk of costly design errors. Any delays or errors in the design of our new silicon platforms could significantly increase the cost of development as well as adversely affect our time to market, which may have a material adverse effect on our business, results of operations and financial condition.

We depend upon partnering with other companies to develop IP, reference platforms, algorithms and system software.

In addition to working directly with our customers, we partner with other companies that are experts in certain technologies to develop additional intellectual property, reference platforms, algorithms, and system software to provide application solutions. We also work with IoP processor manufacturers and companies that supply sensor, storage, networking or graphics components for embedded systems. The depth of these relationships varies depending on the partner and the dynamics of the end market being targeted, but is typically a co-marketing relationship that includes joint account calls, promotional activities and/or engineering collaboration and developments, such as reference designs. If we are unable to license new technologies, maintain a close working relationship with our partners, fail to continue to develop and introduce leading technologies or if these technologies fail to generate the revenue we expect, we may not be able to compete effectively in the future, which may have a material adverse effect on our business, results of operations and financial condition.

We depend upon third parties to fabricate, assemble, test and program our products, and to provide logistics services. Any problems at these third parties could adversely affect our business, results of operations and financial condition.

We contract with third parties to fabricate, assemble, test and program our devices, and vendors for logistics. In general, each of our devices is fabricated, assembled and programmed by a single supplier, and the loss of a supplier, transfer of manufacturing to a new location, expiration of a supply agreement or the inability of our suppliers to manufacture our products to meet volume, performance, quality and cost targets could have a material adverse effect on our business. Our relationship with our suppliers could change as a result of a merger or acquisition. If for any reason these suppliers or any other vendor becomes unable or unwilling to continue to provide services of acceptable quality, at acceptable costs and in a timely manner, our ability to operate our business or deliver our products to our customers could be severely impaired. We would have to identify and qualify substitute suppliers, which could be time consuming, difficult and result in unforeseen operational problems, or we could announce an end-of-life program for these products. Alternate suppliers might not be available to fabricate, assemble, test and program our devices or, if available, might be unwilling or unable to offer services on acceptable terms. In addition, if competition for wafer manufacturing capacity increases, if we need to migrate to more advanced wafer manufacturing technology, or if competition for assembly services increases, we may be required to pay or invest significant amounts to secure access to this capacity. The number of companies that provide these services is limited and some of them have limited operating histories and financial resources. In the event our current suppliers refuse or are unable to continue to provide these services to us, or if we are unable to secure sufficient capacity from our current suppliers on commercially reasonable terms, we may be unable to procure services from alternate suppliers in a timely manner, if at all. Moreover, our reliance on a limited number of suppliers subjects us to reduced control over delivery schedules, quality assurance and costs. This lack of control may cause unforeseen product shortages or may increase our cost to manufacture and test our products.

We utilize third-party logistics services, including transportation, warehouse and shipping services. These service providers are subject to interruptions that affect their ability to service us, including the availability of transportation services, disruptions related to work stoppages, volatility in fuel prices and security incidents or natural events at manufacturing, shipping or receiving points or along transportation routes.

In the event any of our third-party suppliers or vendors were to experience financial, operational, production or quality assurance difficulties resulting in a reduction or interruption in supply or providing services to us, our business, results of operations and financial condition may be materially adversely affected.

We entered into informal partnerships with certain third parties for the development of solutions. Our business could be adversely affected if such informal partnerships fail to grow as we expected.

Our approach to developing solutions for potential customers involves developing solutions for and aligning our roadmap with application processor, sensor, and flash memory vendors. We have entered into informal partnerships with other parties that involve the development of solutions that interface with their devices or standards. These informal partnerships also may involve joint marketing campaigns and sales calls. If the informal partnerships do not grow as expected or if they are significantly reduced or terminated by acquisition or other means, our business, results of operations and financial condition could be materially adversely affected and we may be required to write-off related inventories and long-lived assets.

Our solutions face competition from suppliers of ASSPs, suppliers of integrated application processors, low power FPGAs, low power MCUs, suppliers of ASICs, suppliers of eFPGA IP, and suppliers of sensor algorithm software whose software is running on competitors' devices.

We face competition from companies that offer ASSPs. While it is difficult to provide a unique solution through the use of ASSPs, ASSPs generally are cost-effective standard products with short lead times. In certain design opportunities, ASSPs can be combined to achieve system design objectives. Manufacturers of integrated application processors often integrate new features when they introduce new products. A system designer could elect the use of an integrated processor that includes the features offered in our solutions and/or a widely accepted feature of our solutions could be integrated into a competitor's ASSP. Some vendors offer low power FPGAs that can be adopted by a IoT device for hardware differentiation that is similar in functionality, physical size, power consumption and price to what we offer with our programmable logic-based solutions. We also face competition from low power MCU companies. While MCUs cannot be customized at the hardware level for product differentiation, they do have the ability to run custom software algorithms written in standard C code, which may yield similar functionality as what we can provide with our products. Companies that supply ASICs, which may be purchased for a lower price at higher volumes and typically have greater logic capacity, additional features and higher performance than our products. In addition, we face competition from companies that provide sensor algorithm software, which may be licensed directly by an OEM, or licensed for use through an MCU company. If we are unable to successfully compete with companies that supply ASSPs, lower power FPGAs, MCUs, ASICs, eFPGA IP, or sensor algorithm software in any of the following areas, our business, results of operations and financial condition will be materially adversely affected: (i) the development of new products, solutions and advanced manufacturing technologies; (ii) the quality, power characteristics, performance characteristics, price and availability of devices, programming hardware and software development tools; (iii) the ability to engage with companies that provide synergistic products and services, including algorithms that may be preloaded into our device at configuration; (iv) the incorporation of industry standards in our products and solutions; (v) the diversity of product offerings available to customers; and (vi) the quality and cost-effectiveness of design, development, manufacturing and marketing efforts.

We may engage in manufacturing, distribution or technology agreements that involve numerous risks, including the use of cash, erosion of margins due to royalty obligations or revenue sharing and diversion of resources.

We have entered into and, in the future, intend to enter into agreements that involve numerous risks, including the use of significant amounts of our cash; royalty obligations or revenue sharing; diversion of resources from other development projects or market opportunities; our ability to collect amounts due under these contracts; and market acceptance of related products and solutions. If we fail to recover the cost of these or other assets from the cash flow generated by the related products, our assets will become impaired and our results of operations and financial condition could be materially adversely affected.

Both our customers and we are subject to laws, regulations and similar requirements, changes to which may adversely affect our business, results of operations and financial condition.

Both our customers and we are subject to laws, regulations and similar requirements that affect our business, results of operations and financial condition, including, but not limited to, the areas of commerce, import and export control, financial disclosures, intellectual property, income and other taxes, anti-trust, anti-corruption, labor, environmental, health and safety. Our compliance in these areas may be costly, especially in areas where there are inconsistencies between the various jurisdictions in which we operate. While we have implemented policies and procedures to comply with laws and regulations, there can be no assurance that our employees, contractors, suppliers or agents will not violate such laws and regulations or our policies. Any such violation or alleged violation could materially and adversely affect our business, financial condition, cash flows and results of operations. Any changes or potential changes to laws, regulations or similar requirements, or our ability to respond to these changes, may significantly increase our costs to maintain compliance or result in our decision to limit our business, products or jurisdictions in which we operate, any of which could materially and adversely affect our results of operations and financial condition. Federal and state regulatory agencies, including the United States Federal Communications Commission and the various state public utility commissions and public service commissions, regulate most of our domestic telecommunications customers. Similar government oversight also exists in the international market. While we may not be directly affected by this legislation, such regulation of our customers may negatively impact our business. For instance, the sale of our products may be affected by the imposition upon certain of our customers of common carrier tariffs and the taxation of telecommunications services. These regulations are continuously reviewed and changed by the various governmental agencies. Changes in current or future laws or regulations, in the United States or elsewhere, could materially and adversely affect our results of operations and financial condition.

The Dodd-Frank Wall Street Reform and Consumer Protection Act includes provisions regarding certain minerals and metals, known as conflict minerals, mined from the Democratic Republic of Congo and adjoining countries. These provisions require companies to undertake due diligence procedures and report on the use of conflict minerals in its products, including products manufactured by third parties. Compliance with these provisions has caused and will continue to cause us to incur costs to determine whether our supply chain is conflict free, and we may face difficulties if our suppliers are unwilling or unable to verify the source of their materials. Our ability to source these minerals and metals may also be adversely impacted. In addition, our customers may require that we provide them with a certification and our inability to do so may disqualify us as a supplier.

We have entered and will continue to enter into strategic licensing and collaborative partnerships and relationships with third parties. The anticipated benefits of these partnerships and relationships may never materialize and these partnerships and relationships may instead disrupt our business and harm our financial condition.

We have entered into strategic licensing and collaborative partnerships and relationships with third parties and will continue to enter into such partnerships and relationships with the goal of acquiring or gaining access to new and innovative semiconductor products and technologies, as well as other technologies which can be used to add to the differentiation of our emerging products, on a timely basis. Negotiating and performing under these arrangements involves significant time and expense, and we cannot assure you that the anticipated benefits of these arrangements will ever materialize or that the products or technologies involved will ever be commercialized or that, as a result, we will not have written down a portion or all of our investment. The arrangements with some third parties contain conditions and contingencies (such as a condition to raise a certain amount of capital), and we cannot assure you that we will meet all the conditions under these arrangements. We may end up with owing various obligations and commitments to third parties related to these arrangements. Such arrangements can magnify several risks for us, including loss of control over the development and development timeline of products being developed with third parties. Accordingly, we face increased risk that development activities may result in products that are not commercially successful or that are not available in a timely fashion. In addition, any third-party with whom we enter into a development, product collaboration or technology licensing arrangement may fail to commit sufficient resources to the project, change its policies or priorities and abandon or fail to perform its obligations related to the collaboration. The failure to timely develop commercially successful products through our development projects or strategic investment activities as a result of any of these and other challenges could have a material adverse effect on our business, results of operations and financial condition. Other challenges and risks presented by use of strategic partnerships include the acquisition of a partner with which we have a strategic relationship by an unaffiliated third-party that either delays or jeopardizes the original intent of the partnering relationship or investment.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our principal administrative, sales, marketing, research and development and final testing facility is located in a building of approximately 24,164 square feet of premises located at 2220 Lundy Avenue, San Jose, California, leased for a period of five years, effective April 15, 2019.

In October 2018, the Company leased a facility for Research and Development in San Diego, California, the lease of which expired in July 2020. The Company did not renew the lease agreement and closed the San Diego office. On February 28, 2019, SensiML Corporation, our subsidiary, entered into an agreement to lease approximately 925 square feet of facility space in Beaverton, Oregon, which expired in March 2021. The Company subsequently entered into a new lease agreement for a 705 square foot facility in Beaverton Oregon with a lease term duration from April 2021 until March 2023. Additionally, we leased a 9,400 square foot facility in Bangalore, India for the purpose of software development, which expired in June 2021. On July 10, 2020, the Company's Indian subsidiary leased a smaller office premises of 1,100 square feet for a period of 11 months to accommodate the reduced headcount resulting from our restructuring in 2020. The lease was subsequently renewed to end in May 2022. We also lease office space in Shanghai, China; in London, England; in Taipei, Taiwan; and in Seongnam City, South Korea where the six-month lease will expire in May 2022. Leases in London, Shanghai, and Taiwan relate to flexible work-space, monthly rentals used for sales offices. We believe that our existing facilities are adequate for our current needs.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we are involved in legal actions arising in the ordinary course of business, including but not limited to intellectual property infringement and collection matters. Absolute assurance cannot be given that third-party assertions will be resolved without costly litigation in a manner that is not adverse to our financial position, results of operations or cash flows or without requiring royalty or other payments in the future, which may adversely impact gross profit. We are not currently a party to any material pending legal proceedings.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Common Stock Information

Our common stock is currently traded on the Nasdaq Capital Market under the symbol QUIK. From October 15, 1999, the date of our initial public offering to July 21, 2019, our common stock was traded on the Nasdaq Global Market under the same symbol.

The closing price of our common stock on the Nasdaqwas $4.80 per share on March 14, 2022. As of March 14, 2022, there were 12,362,334 sharesof common stock outstanding that were held of record by 117 stockholders. The actual number of stockholders is greater than this number of holders of record since this number does not include stockholders whose shares are held in trust by other entities.

Dividend Policy

We have never declared or paid any dividends on our capital stock. We currently expect to retain future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future.

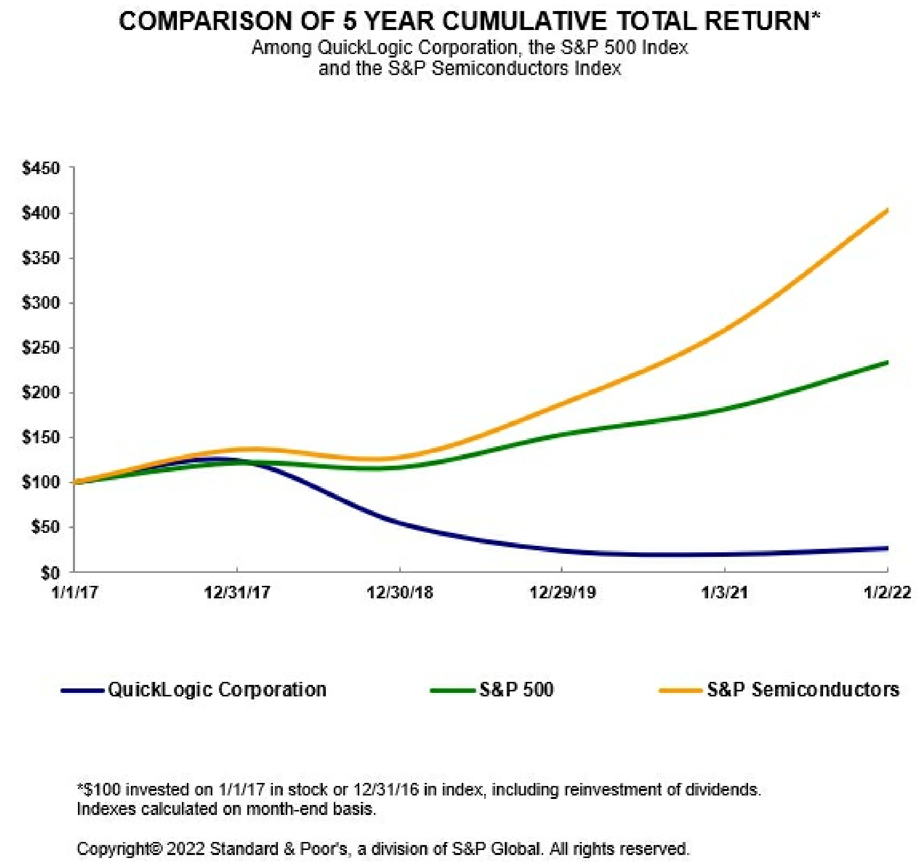
Equity Compensation Plan Information

The information required by this item regarding equity compensation plans is set forth under the caption "Equity Compensation Plan Summary" in our Proxy Statement which information is incorporated by reference herein.

Stock Performance Graph

The following graph compares the cumulative total return to stockholders of our common stock from December 30, 2016 to January 2, 2022 to the cumulative total return over such period of (i) the S&P 500 Index and (ii) the S&P Semiconductors Index. The graph assumes that $100 was invested on December 30, 2016 in QuickLogic's common stock and in each of the other two indices and the reinvestment of all dividends, if any, through January 2, 2022

The information contained in the Performance Graph shall not be deemed to be "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that QuickLogic specifically incorporates it by reference into any such filing. The graph is presented in accordance with SEC requirements. Stockholders are cautioned against drawing any conclusions from the data contained therein, as past results are not necessarily indicative of future performance.



	1/1/2017	12/31/2017	12/30/2018	12/29/2019	1/3/2021	1/2/2022
QuickLogic Corporation	**100.00**	**125.18**	**54.73**	**23.54**	**19.48**	**26.26**
S&P 500	**100.00**	**121.83**	**116.49**	**153.17**	**181.35**	**233.41**
S&P Semiconductor	**100.00**	**136.32**	**127.62**	**187.29**	**269.19**	**402.02**

The stock price performance included in this graph is not necessarily indicative of future stock price performance.

Table of Contents

ITEM 6. SELECTED FINANCIAL DATA

	Fiscal Years 2021	2020	2019	2018	2017
	(in thousands, except per share amount)				
Statements of Operations:					
Revenue	$ 12,685	$ 8,634	$ 10,310	$ 12,629	$ 12,149
Cost of revenue	5,266	4,386	4,405	6,295	6,627
Gross profit	7,419	4,248	5,905	6,334	5,522
Operating expenses:					
Research and development	6,927	7,544	12,350	9,948	9,572
Selling, general and administrative	8,008	6,820	8,918	9,982	9,900
Restructuring costs(1)	—	753	—	—	—
Loss from operations	(7,516)	(10,869)	(15,363)	(13,596)	(13,950)
Interest expense	(130)	(328)	(350)	(108)	(115)
Gain on forgiveness of PPP Loan	1,192				
Interest income and other expense, net	(43)	97	189	77	21
Loss before income taxes	(6,497)	(11,100)	(15,524)	(13,627)	(14,044)
Provision for (benefit from) income taxes	119	51	(80)	152	87
Net loss	$ (6,616)	$ (11,151)	$ (15,444)	$ (13,779)	$ (14,131)
Net loss per share:					
Basic and diluted	$ (0.57)	$ (1.14)	$ (2.02)	$ (2.16)	$ (2.56)
Weighted average shares: (2)					
Basic and diluted	11,535	9,781	7,663	6,365	5,521

	January 2, 2022	January 3, 2021	December 29, 2019	December 30, 2018	January 1, 2018
	(in thousands)				
Balance Sheet Data:					
Cash and cash equivalents	$ 19,605	$ 22,748	$ 21,548	$ 26,463	$ 16,527
Working capital	$ 5,285	$ 10,178	$ 10,366	$ 15,576	$ 12,619
Total assets	$ 28,973	$ 32,888	$ 33,404	$ 36,086	$ 24,636
Long-term obligations, excluding current portion	$ 891	$ 2,389	$ 1,583	$ 124	$ 369
Total stockholders' equity	$ 9,209	$ 12,487	$ 13,823	$ 17,255	$ 14,878

(1) In 2020, we implemented a restructuring plan to lower annual operating expenses which resulted in $753,000 of non-recurring restructuring expenses.
(2) Net loss per share and weighted average shares, basic and diluted are adjusted to reflect 1-for-14 reverse stock split effected on December 23, 2019.

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

The following discussion of our financial condition and results of operations should be read in conjunction with the financial statements and related notes included in this Annual Report on Form 10-K. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties including those discussed under Part I, Item 1A, "Risk Factors." These risks and uncertainties may cause actual results to differ materially from those discussed in the forward-looking statements.

Overview

We develop low power, multi-core semiconductor platforms and IP for AI, voice and sensor processing. The solutions include an eFPGA for hardware acceleration and pre-processing, and heterogeneous multi-core SoCs that integrate eFPGA with other processors and peripherals. The SensiML Analytics Toolkit from our recently acquired wholly owned subsidiary, SensiML completes the "full stack" end-to-end solution with accurate sensor algorithms using AI technology. The full range of platforms, software tools and eFPGA IP enables the practical and efficient adoption of AI, voice and sensor processing across Consumer/Industrial IoT, Consumer Electronics, Military, Aerospace and Defense applications.

Our new products include our EOS™, QuickAI™, SensiML Analytics Studio, ArcticLink® III, PolarPro®3, PolarPro II, PolarPro, and Eclipse II products (which together comprise our new product category). Our mature products include primarily FPGA families named pASIC®3 and QuickRAM® as well as programming hardware and design software. In addition to delivering our own semiconductor solutions, we have an IP business that licenses our eFPGA technology for use in other semiconductor companies SoCs. We began delivering our eFPGA IP product ArcticPro™ in 2017, which is included in the new product revenue category. Through the acquisition of SensiML, we now have an IoT AI software platform that includes SaaS subscriptions for development, per unit license fees when deployed in production, and proof-of-concept services – all of which are also included in the new product revenue category.

Our semiconductor solutions typically fall into one of three categories: Sensor Processing, Display and Smart Connectivity. Our solutions include a unique combination of our silicon platforms, IP cores, software drivers, and in some cases, firmware and application software. All of our silicon platforms are standard devices and must be programmed to be effective in a system. Our IP that enables always-on context-aware sensor applications includes our Flexible Fusion Engine, our Sensor Manager and Communications Manager technologies as well as IP that (i) improves multimedia content, such as our Visual Enhancement Engine, or VEE, technology, and Display Power Optimizer, or DPO, technology; and (ii) implements commonly used mobile system interfaces, such as Low Voltage Differential Signaling, or LVDS, Mobile Industry Processor Interface, or MIPI, and Secure Digital Input Output, or SDIO.

Through the acquisition of SensiML, our core IP also includes the SensiML AI Toolkit that enables OEMs to develop AI software for a broad array of resource-constrained time-series sensor endpoint applications. These include a wide range of consumer and industrial sensing applications.

We also work with processor manufacturers, sensor manufacturers, and voice recognition, sensor fusion and context awareness algorithm developers in the development of reference designs. Through reference designs that incorporate our solutions, we believe processor manufacturers, sensor manufacturers, and sensor and voice algorithm companies can expand the available market for their respective products. Furthermore, should a solution developed for a processor manufacturer or sensor and/or sensor algorithm company be applicable to a set of common OEMs or Original Design Manufacturers, or ODMs, we can amortize our Research and Development, or R&D, investment over that set of OEMs or ODMs. There may also be cases when platform providers that intend to use always-on voice recognition will dictate certain performance requirements for the combined software/hardware solution before the platform provider certifies and/or qualifies our product for use by end customers.

In addition to working directly with our customers, we partner with other companies that are experts in certain technologies to develop additional IP, reference platforms and system software to provide application solutions, particularly in the area of hardware acceleration for AI-type applications. We also work with mobile processor and communications semiconductor device manufacturers and companies that supply sensor, algorithms and applications. For our sensor processing solutions, we collaborate with sensor manufacturers to ensure interface compatibility. We also collaborate with sensor and voice/audio software companies, helping them optimize their software technology on our silicon platforms in terms of performance, power consumption and user experience.

Our ArcticPro eFPGA IP are currently developed on 65nm, 40nm and 22nm process nodes. The licensable IP is generated by a compiler tool that enables licensees to create an eFPGA block that they can integrate into their SoC without significant involvement by QuickLogic. We believe this flow enables a scalable support model for QuickLogic. For our eFPGA strategy, we work with semiconductor manufacturing partners to ensure our eFPGA IP is proven for a given foundry and process node before it is licensed to a SoC company.

In order to grow our revenue from its current level, we depend upon increased revenue from our new products including existing new product platforms, eFPGA IP and platforms currently in development. We expect our business growth to be driven mainly by our silicon solutions, eFPGA IP and SensiML AI Software. Therefore, our revenue growth needs to be strong enough to enable us to sustain profitability while we continue to invest in the development, sales and marketing of our new solution platforms, IP and software. We are expecting revenue growth from EOS S3, SensiML AI SaaS, and eFPGA IP license in fiscal year 2021.

We continue to seek to expand our revenue, including pursuing high-volume sales opportunities in our target market segments, by providing solutions incorporating IP, or industry standard interfaces. Our industry is characterized by intense price competition and by lower margins as order volumes increase. While winning large volume sales opportunities will increase our revenue, we believe these opportunities may decrease our gross profit as a percentage of revenue.

During 2021 we generated total revenue of $12.7 million, which represents a 46.9% increase from $8.6 million in fiscal 2020. Our new product revenue during fiscal 2021 was $7.8 million, which represents an 179% increase from fiscal 2020. Of the $7.8 million in fiscal 2021 new product revenue, approximately $2.7 million was generated by professional engineering services related to our eFPGA IP. Our mature product revenue during 2021 was $4.9 million, which represents a 16% decrease from 2020. We shipped our new products into four of our targeted mobile market segments: Smartphones, Wearables, Mobile Enterprise, Tablets, and SaaS revenue from the new Artificial Intelligence or AI market beginning in 2020. Overall, with the improvements in reduced operating expenses achieved by our restructuring activities implemented in early fiscal 2020, offset partially by the impact of the COVID-19 pandemic in 2021, we reported a net loss of $6.6 million for 2021 compared to a net loss of $11.2 million for 2020

We have experienced net losses in the past years and expect to experience losses in at least some of the fiscal quarters during 2022, as we continue to develop new products, applications and technologies. Our new products and products currently under development have been generating lower gross margin as a percentage of revenue than our mature products due to the markets that we have targeted and the larger order quantities associated with these applications. Whether we can achieve cash flow levels sufficient to support our operations cannot be accurately predicted, and our investment portfolio is subject to a degree of interest rate and liquidity risk. Unless such cash flow levels are achieved, in addition to the approximately $1 million in proceeds that we received in September 2021 from the sale of our equity securities, the subsequent event of the sale of our equity securities for approximately $1.5 million in proceeds during February 2022, and the credit line we may be able to draw down from Heritage Bank of Commerce, we may need to obtain additional funds through strategic divestiture, or sell debt or equity securities, or some combination thereof, to provide funding for our operations. Such additional funding may not be available on commercially reasonable terms, or at all.

On December 6, 2019, the Board of Directors of the Company approved a 1-for-14 reverse stock split of the Company's outstanding Common Stock, which became effective on December 23, 2019, which was approved by the Company's shareholders in a special meeting held on November 26, 2019. At the effective time of the Reverse Stock Split, every 14 issued and outstanding shares of the Company Common Stock were automatically combined into one issued and outstanding share of Common Stock without any change in the par value per share. Stockholders who would have otherwise been entitled to fractional shares of Common Stock as a result of the Reverse Stock Split received a cash payment in lieu of receiving fractional shares. All share, equity award, and per share amounts contained in this Form 10-K and the accompanying Consolidated Financial Statements have been adjusted to reflect the Reverse Stock Split for all prior periods presented.

COVID-19 Response

The COVID-19 pandemic and its potential effects on the Company's business in fiscal 2022 and beyond remain uncertain. There have been further restrictions by the governmental authorities as a result of a surge in COVID-19 cases during the year 2021 and continuing into fiscal 2022. These restrictions and other impacts from COVID-19 could cause further disruptions or restrictions on the Company's ability to source, manufacture or distribute its products, including temporary disruptions to the facilities of its contract manufacturers in China, Taiwan, Philippines and Singapore, or the facilities of its suppliers and their contract manufacturers globally. Additionally, multiple countries have imposed and may further impose restrictions on business operations and movement of people and products to limit the spread of COVID-19. This might cause delays in production or delivery of components or raw materials that are part of the Company's global supply chain. If COVID-19 cases surge and the Company experiences more pronounced disruptions in its operations, the Company may experience constrained supply or curtailed demand that may materially adversely impact its business and results of operations.

The extent of the impact of COVID-19 on our operational and financial performance will depend on future developments, including the duration and spread of the pandemic, restrictions on travel, transportation and other containment measures, the success and availability of the recent vaccine, our compliance with these measures and the impact on our employees, customers, contractors and supply chain, all of which are uncertain and cannot be predicted.

Restructuring

In January 2020, the Company implemented a restructuring plan to lower annual operating expenses. The restructuring plan was approved by the Company's Board of Directors on January 24, 2020. Pursuant to the restructuring plan, the Company recorded $753,000 of restructuring charges during the twelve months of fiscal year 2020, consisting primarily of employee severance related costs and facilities costs. See Note 1to the Consolidated Financial Statements for additional information.

Our employees and customers

Our top priority during the ongoing COVID-19 pandemic remains the health and safety of our employees and their families, as well as our customers. As global governments institute restrictions on commercial operations, we are working to ensure our compliance while also maintaining business continuity for operations.

Most of our personnel continue to work from home except few personnel, who are required for minimum operations. We only allow employees in our facilities who are essential to the facilities' operations under best practices guidelines on maintaining physical distancing, utilizing enhanced cleaning protocols and usage of personal protective equipment.

We are committed to our customers to enable the support they need to continue providing vital services and tools. Our global offices remain operational to meet customer needs during the pandemic in compliance with the orders and restrictions imposed by local authorities in each of our locations, and we are working with our customers to meet their specific shipment needs. While the pandemic has created delays on the inbound supply chain at our partners and our own facilities and both inbound and outbound logistical challenges, we have been able to identify alternative solutions such that none of the issues have had a material impact on our ability to fulfill demand.

Critical Accounting Policies and Estimates

The methods, estimates and judgments we use in applying our most critical accounting policies have a significant impact on the results we report in our consolidated financial statements. The SEC has defined critical accounting policies as those that are most important to the portrayal of our financial condition and results of operations and require us to make our most difficult and subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain. Based on this definition, our critical policies include revenue recognition and determination of the Stand-Alone Selling Price ("SSP") for certain distinct performance obligations (such as for IP licensing and professional services contracts), goodwill and intangible assets, valuation of inventories including identification of excess quantities and product obsolescence, allowance for doubtful accounts, valuation of long-lived assets, leases, measurement of stock-based compensation, and accounting for income taxes. We believe that we apply judgments and estimates in a consistent manner and that such consistent application results in consolidated financial statements and accompanying notes that fairly represent all periods presented. However, any factual errors or errors in these judgments and estimates may have a material impact on our financial statements.

Revenue Recognition

We recognize revenue in accordance with ASC 606 and related ASUs, which provide supplementary guidance, and clarifications. The results for reporting periods beginning after January 1, 2018 within this Form 10-K, are presented in accordance with ASC 606, although comparative information for the reporting periods prior to January 1, 2018 have not been restated and continue to be reported under the accounting standards and policies in effect for those periods. Under ASC 606 and related ASUs, revenue is recognized as follows:

We supply standard products that must be programmed before they can be used in an application. Our products may be programmed by us, distributors, end-customers or third parties. Additionally, we provide professional engineering services to our customers.

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services.

We determine revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer,
- Identification of the performance obligations in the contract,
- Determination of the transaction price,
- Allocation of the transaction price to the performance obligations in the contract, and
- Recognition of revenue when, or as, we satisfy a performance obligation.

As part of its assessment of each contract, the Company evaluates certain factors including the customer's ability to pay, or credit risk. For each contract, the Company considers the promise to transfer products, each of which is distinct, to be the identified performance obligations. In determining the transaction price, the price stated on the purchase order is typically fixed and represents the net consideration to which the Company expects to be entitled, and therefore there is no variable consideration. As the Company's standard payment terms are less than one year, the Company has elected, as a practical expedient, to not assess whether a contract has a significant financing component. The Company allocates the transaction price to each distinct product based on its relative standalone selling price. The product price as specified on the purchase order is considered the standalone selling price as it is an observable source that depicts the price as if sold to a similar customer in similar circumstances.

Revenue arrangements with customers often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. The Company uses a range of amounts to estimate SSP when each of the products and services are sold separately and determines the discount to be allocated based on the relative SSP of the various products and services when products and services sold are bundled. In instances where SSP is not directly observable, such as when the Company does not sell the product or service separately, it determines the SSP using information that may include market conditions and other observable inputs. The Company typically has more than one SSP for individual products and services due to the stratification of those products and services by customers. In these instances, the Company may use information such as the size of the customer, customer tier, type of the technology used, customer demographics, geographic region and other factors in determining the SSP

Product Revenue

The Company generates most of its revenue by supplying standard hardware products, which must be programmed before they can be used in an application. The Company's contracts with customers are generally for product only, and do not include other performance obligations such as services, extended warranties or other material rights.

The Company recognizes hardware product revenue at the point of time when control of products is transferred to the customers, when the Company's performance obligation is satisfied, which typically occurs upon shipment from the Company's manufacturing site or its headquarters.

Intellectual Property and Software License Revenue

The Company generates revenue from licensing their intellectual property or IP, software tools and royalties from licensing its technology. The Company also recognized approximately $1.1 million of IP and software licensing revenue during fiscal 2021 and diminimis amounts in fiscal 2020 respectively Additionally, the Company recognizes IP and Software License revenue at the point of time when the control of IP or software license has been transferred.

Some of the IP and Software License contracts with customers contain multiple performance obligations. For these contracts, the Company accounts for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. The Company determines the standalone selling prices based on our overall pricing objectives, taking into consideration market conditions and other factors, including the value of our contracts, type of the customer, customer tier, type of the technology used, customer demographics, geographic locations, and other factors.

ASC 606 provides for three methods to establishing SSP: Adjusted market assessment, Cost-plus-margin, and the Residual method. For IP license revenue, the Company utilized a market assessment approach based on discounted, expected future net cash flows to determine the value of the IP in order to establish SSP. This method was chosen as QuickLogic had cash flow information available from historical commercialization of similar IP. The discount rate utilized was 12%, equal to the company's estimated weighted average cost of capital.

There are no variable consideration estimates associated with either combined development and IP arrangements or for standalone arrangements involving either the sale or licensing of IP.

Professional Services Revenue

Professional Services revenue consists of professional engineering fees associated with custom integration of the Company's technology solutions into its customers' products. Customization professional engineering services contract revenue, inclusive of eFPGA customization, was approximately $1.5 million and $0.3 million during fiscal 2021 and fiscal 2020, respectively.

An initial revenue arrangement may consist of significant software customization services and support and maintenance services that include post-implementation customer support on a time-and-materials basis as-needed.

The Company customization services revenue based on the duration of the project and specific terms and deliverables unique to each contract:

- an over time model, measured using the input method such as units of labor
- an over time model measured using the output method such as specific deliverables produced

Due to the nature of the work performed in these arrangements, the estimation of the over-time model is complex and involves significant judgment. In the case of the input methods, the key factors reviewed by management to estimate costs to complete each contract is the estimated labor days-effort necessary to complete the project, budgeted hours, hourly cost to the Company, profit margins, and engineering hours at cut-off when projects extend beyond a reporting period. In relation to the output method, key factors reviewed by the Company are the specific deliverables specified in the contracts with customers.

Significant Judgments and Estimates

With the exceptions noted below, no significant judgment has generally been required in determining the amount and timing of revenue from the Company's contracts with customers.

- The Company has methods and controls in place for tracking labor-days incurred in completing customization and other professional services as well as quantifying changes in estimates.
- For time and material derived revenue, the Company estimates a fully-burdened overhead rate for the labor and any materials required
- During 2021, Company entered into a revenue contract with a non-affiliate customer, where the customer provided cash in addition to shares of common stock as payment in exchange for IP license, know how, and professional engineering services. The customer is a privately-held company, and as such, its common stock is not publicly tradeable. This contract requires the Company to apply significant judgement in the inputs for estimating the fair value of the shares of private company common stock for the purpose of determining the entire consideration received under the contract with the customer. Inputs involved in estimating the fair value of the private company common stock include the selection of a peer company group, the estimated volatility of the equity, based on a basket of peer group public company common stock, the discount rate, discount for a lack of marketability, and time to exit significantly affect the estimated fair value of the non-cash consideration received. Consequently, at January 2, 2022, the Company recognized $300,000 as an investment in a private-company, non-affiliate on its consolidated balance sheet and the same corresponding amount in deferred revenue. See Note 9 and Note 14 to the Consolidated Financial Statements for additional information.
- The Company does not currently have any revenue contracts with variable consideration.

Contract Balances

Timing of revenue recognition may differ from the timing of invoicing to the Company's customers due to contractual terms. The Company records contract assets when revenue is recognized prior to invoicing, and a contract liability when revenue is recognized subsequent to invoicing. The contract assets are transferred to receivables when billing occurs and contract liabilities are transferred to revenue once the related performance obligation is satisfied.

Software as a Service Revenue, or SaaS Revenue

Software products that are offered to customers with a right to use the hosted software over the contract period without taking the possession of it are billed on a subscription basis. Revenue that are billed on a subscription basis is recognized ratably over the contract period.

Maintenance Revenue

The Company recognizes revenue from maintenance ratably over the term of the underlying maintenance contract term. Renewals of maintenance contracts create new performance obligations that are satisfied over the term with the revenues recognized ratably over the term.

Royalty Revenue

The Company recognizes royalty revenue when the later of the following events occurs: (a) The subsequent sale or usage occurs. (b) The performance obligation to which some or all of the sales-based royalty has been allocated has been satisfied

Deferred Revenue

Receivables are recognized in the period we ship the product. Payment terms on invoiced amounts are based on contractual terms with each customer. When we receive consideration, or such consideration is unconditionally due, prior to transferring goods or services to the customer under the terms of a sales contract, we record deferred revenue, which represents a contract liability. We recognize deferred revenue as net sales once control of goods and/or services have been transferred to the customer and all revenue recognition criteria have been met and any constraints have been resolved. We defer the product costs until recognition of the related revenue occurs.

Assets Recognized from Costs to Obtain a Contract with a Customer

We recognize an asset for the incremental costs of obtainng a contract with a customer if we expect the benefit of those costs to be longer than one year. We have concluded that none of the costs we have incurred to obtain and fulfill our ASC, 606 contracts meet the capitalization criteria, and as such, there are no costs deferred and recognized as assets on the consolidated balance sheets at January 2, 2022and January 3, 2021.

Practical Expedients and Exemptions

(i) Taxes collected from customers and remitted to government authorities and that are related to the sales of our products are excluded from revenues.

(ii) Sales commissions are expensed when incurred because the amortization period would have been one year or less. These costs are recorded in Selling, general and administrative expense in the Condensed Consolidated Statements of Income.

(iii) We do not disclose the value of unsatisfied performance obligations for (i) contracts with original expected lengths of one year or less or (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for the services performed.

We record allowance for sales returns. Amounts recorded for sales returns for the year ended January 2, 2022, January 3, 2021, and December 29, 201 were approximately ($13,000), $30,000, and $60,000 respectively on the Company's Consolidated Statement of Operations. The allowance for sales returns is based on a historical returns analysis performed on a quarterly basis.

The Company routinely assesses new, and continuing customers, for credit worthiness. The Company historically has not had problems with collectability from its customers and has not had any, or immaterial amounts, in allowances for doubtful accounts in Accounts receivable, net of allowances for doubtful accounts on its Consolidated Balance Sheets for all years presented in this Form 10K.

Cost of Revenue

We record all costs associated with product sales and professional services in cost of revenue. These costs include the cost of materials, contract manufacturing fees, shipping costs and quality assurance. Cost of revenue also includes indirect costs such as warranty, excess and obsolete inventory charges, general overhead costs, depreciation and amortization of certain capitalized software. Cost of revenue related to professional services primarily comprise the cost of labor was approximately $0.4 million for fiscal 2021 and was de minimis for each of fiscal 2020 and fiscal 2019.

Allowance for doubtful accounts

The Company routinely assesses new, and continuing customers, for credit worthiness. The Company historically has not had problems with collectability from its customers and has not had any, or immaterial amounts, in Accounts receivable, net of allowances for doubtful accounts on its Consolidated Balance Sheets for all years presented in this Form 10K.

Valuation of Inventories

Inventories are stated at the lower of standard cost or net realizable value. Standard cost approximates actual cost on a first-in, first-out basis. We routinely evaluate quantities and values of our inventories in light of current market conditions and market trends and record reserves for quantities in excess of demand and product obsolescence. The evaluation may take into consideration historic usage, expected demand, anticipated sales price, the stage in the product life cycle of our customers' products, new product development schedules, the effect new products might have on the sale of existing products, product obsolescence, customer design activity, customer concentrations, product merchantability and other factors. Market conditions are subject to change. Actual consumption of inventories could differ from forecasted demand and this difference could have a material impact on our gross margin and inventory balances based on additional provisions for excess or obsolete inventories or a benefit from inventories previously written down. We also regularly review the cost of inventories against estimated market value and record a lower of cost or market reserve for inventories that have a cost in excess of estimated market value, which could have a material impact on our gross margin and inventory balances based on additional write-downs to net realizable value or a benefit from inventories previously written down.

Our semiconductor products have historically had an unusually long product life cycle and obsolescence has not been a significant factor in the valuation of inventories. However, as we pursue opportunities in the IoT market and continue to develop new products, we believe our new product life cycle may be shorter, which could increase the potential for obsolescence. A significant decrease in demand could result in an increase in excess inventory on hand. Although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or frequent new product developments could have a significant impact on the value of our inventory and our results of operations.

Leases

We account for operating and finance leases in accordance with ASU, No. 2016-02, *Leases (Topic 842)*, or ASC 842, Leases. Under ASC 842, all significant lease arrangements are generally recognized at lease commencement. Operating lease right-of-use, or ROU, assets and lease liabilities are recognized at the commencement date. A ROU asset and corresponding lease liability is not recorded for leases with an initial term of 12 months or less (short term leases) and the Company recognizes lease expense for these leases as incurred over the lease term.

ROU assets represent the Company's right to use an underlying asset during the reasonably certain lease terms and lease liabilities represent the Company's obligation to make lease payments arising from the lease. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. The Company primarily uses its incremental borrowing rate, based on the information available at commencement date, in determining the present value of lease payments. The operating lease ROU asset also includes any lease payments related to initial direct cost and prepayments and excludes lease incentives. Lease expense is recognized on a straight-line basis over the lease term. The Company has lease agreements with lease and non-lease components, which are generally accounted for separately.

Upon adoption of the ASU No. 2016-02, the Company recognized right-of-use assets of approximately $975,000 and lease liabilities of approximately $939,000 on the Company's Consolidated Balance Sheet as of March 31, 2019 with no material impact to its Consolidated Statements of Operations. The Company utilized weighted average discount rates of 5.88% and 6.36% for estimation of its ROU assets and ROU liabilities respectively.

Goodwill and Intangible Assets

Goodwill represents the excess fair value of consideration transferred over the fair value of net assets acquired in business combinations. The carrying value of goodwill and indefinite lived intangible assets are not amortized, but are annually tested for impairment and more often if there is an indicator of impairment.

Intangible assets with finite useful lives are amortized on a straight-line basis over the periods benefited. The Company reviews the recoverability of its long-lived assets when events or changes in circumstances occur that indicate that the carrying value of the asset or asset group may not be recoverable. Key estimates utilized are the useful lives applied and assessment for impairment. The assessment of possible impairment is based on the Company's ability to recover the carrying value of the asset or asset group from the expected future pre-tax cash flows (undiscounted and without interest charges) of the related operations. If these cash flows are less than the carrying value of such asset, an impairment loss is recognized for the difference between estimated fair value and carrying value. The measurement of impairment requires management to estimate future cash flows and the fair value of long-lived assets.

Valuation of Long-Lived Assets

We assess annually whether the value of identifiable long-lived assets, including property and equipment, have been impaired and when events or changes in circumstances indicate that the carrying value of an asset or asset group may not be recoverable. Key estimates are the useful lives applied and impairment assessment. Our assessment of possible impairment is based on our ability to recover the carrying value of an asset or asset group from their expected future pre-tax cash flows, undiscounted and without interest charges, of the related operations. If these cash flows are less than the carrying value of the asset or asset group, we recognize an impairment loss for the difference between estimated fair value and carrying value, and the carrying value of the related assets is reduced by this difference. The measurement of impairment requires management to estimate future cash flows and the fair value of long-lived assets. Based on this analysis, there are no significant impairments to our long-lived assets.

Measurement of Stock-Based Compensation

We account for stock-based compensation under the provisions of the amended authoritative guidance and related interpretations, which require the measurement and recognition of expense related to the fair value of stock-based compensation awards. The fair value of stock-based compensation awards is measured at the grant date and re-measured upon modification, as appropriate. Determining the appropriate fair value model and calculating the fair value of stock-based awards at the date of grant require judgment.

We use the Black-Scholes option pricing model to estimate the fair value of employee stock options and rights to purchase shares under our 2019 Stock Plan, 2009 Stock Plan and 2009 Employee Stock Purchase Plan, or ESPP, consistent with the provisions of the amended authoritative guidance. This fair value is expensed on a straight-line basis over the requisite service period of the award. Using the Black-Scholes pricing model requires us to develop highly subjective assumptions, including the expected term of awards, expected volatility of our stock, expected risk-free interest rate and expected dividend rate over the term of the award. Our expected term of awards is based primarily on our historical experience with similar grants. Our expected stock price volatility for both stock options and ESPP shares is based on the historic volatility of our stock, using the daily average of the opening and closing prices and measured using historical data appropriate for the expected term. The risk-free interest rate assumption approximates the risk-free interest rate of a Treasury Constant Maturity bond with a maturity approximately equal to the expected term of the stock option or ESPP shares.

In addition to the assumptions used in the Black-Scholes pricing model, the amended authoritative guidance requires that we recognize compensation expense only for awards ultimately expected to vest; therefore, we are required to develop an estimate of the historical pre-vest forfeiture experience and apply this to all stock-based awards. The fair value of restricted stock awards, or RSAs, and restricted stock units, or RSUs, is based on the closing price of our common stock on the date of grant. RSA and RSU awards which vest with service are expensed over the requisite service period. RSAs and RSU awards that are expected to vest based on the achievement of a performance goal are expensed over the estimated vesting period, which is estimated by management. We regularly review the assumptions used to compute the fair value of our stock-based awards and we revise our assumptions as appropriate. See Note 13 to the Consolidated Financial Statements for additional information.

Accounting for Income Taxes

As part of the process of preparing our financial statements, we are required to estimate our income taxes in each of the jurisdictions in which we operate. This process involves estimating our actual current tax exposure together with assessing temporary differences resulting from different tax and accounting treatment of items, such as deferred revenue, allowance for doubtful accounts, the impact of equity awards, depreciation and amortization, and employee-related accruals. These differences result in deferred tax assets and liabilities, which are included on our balance sheets. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income. To the extent we believe that recovery is not likely, we must establish a valuation allowance. To the extent we establish a valuation allowance or increase this allowance in a period, we must include an expense within the tax provision in the statements of operations.

Significant management judgment is required in determining our provision for income taxes, deferred tax assets, liabilities and any valuation allowance recorded against our net deferred tax assets. Our deferred tax assets net of deferred tax liabilities relating to an ROU asset of $0.4 million, consisted primarily of net operating loss carryforwards, depreciation and amortization, amounted to approximately $61 million, tax effected, as of the end of 2021. In evaluating our ability to recover our deferred tax assets within the jurisdiction from which they arise, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, uncertainty of projecting future taxable income and results of recent operations. As of January 2, 2022, we had federal and state income tax net operating loss, or NOL, carryforwards of approximately $183.9 million and $94.4 million, respectively, which will expire at various dates from 2022 through 2041. Federal net operating losses generated in 2019 and forward of $55.3 million can be carried forward indefinitely. We had research credit carryforwards of approximately$3.7 million for federal and $4.7 million for state income tax purposes as of January 2, 2022. If not utilized, the federal carryforwards will expire at various dates from 2022. The California credit can be carried forward indefinitely. We believe that it is more likely than not that the deferred tax assets and benefits from these federal and state NOL and credit carryforwards will not be realized. In recognition of this risk, we have recorded a valuation allowance of $60 million, tax-effected, as of the end of fiscal year 2021, due to uncertainties related to our ability to utilize our U.S. deferred tax assets before they expire.

Results of Operations

The following table sets forth the percentage of revenue for certain items in our statements of operations for the periods indicated:

	Fiscal Years		
	2021	**2020**	**2019**
Statements of Operations:			
Revenue	100%	100%	100%
Cost of revenue	42%	51%	43%
Gross profit	58%	49%	57%
Operating expenses:			
Research and development	55%	87%	120%
Selling, general and administrative	63%	79%	86%
Restructuring costs	—%	9%	—%
Loss from operations	(59)%	(126)%	(149)%
Interest expense	(1)%	(4)%	(3)%
Gain on forgiveness of PPP Loan	9%	—%	—%
Interest income and other expense, net	—%	1%	2%
Loss before income taxes	(51)%	(129)%	(151)%
Provision for (benefit from) income taxes	1%	1%	(1)%
Net loss	(52)%	(130)%	(150)%

Impact of inflation and product price changes on our revenue and on income was immaterial in 2021, 2020 and 2019.

Comparison of Fiscal Years 2021 and 2020

Revenue. The table below sets forth the changes in revenue for fiscal year ended January 2, 2022, as compared to fiscal year ended January 3, 2021 (in thousands, except percentage data):

	Fiscal Years					
	2021		**2020**			
	Amount	**% of Total Revenues**	**Amount**	**% of Total Revenues**	**Year-Over-Year Change**	
Revenue by product family (1):						
New products	$ 7,761	61%	$ 2,782	32%	$ 4,979	179%
Mature products	4,924	39%	5,852	68%	(928)	(16)%
Total revenue	$ 12,685	100%	$ 8,634	100%	$ 4,051	47%

(1) New products include all products manufactured on 180 nanometer or smaller semiconductor processes, eFPGA IP license, professional services, QuickAI and SensiML AI software as a service (SaaS) revenue. Mature products include all products produced on semiconductor processes larger than 180 nanometer.

The 179% increase in new product revenue in 2021 compared to 2020 was primarily due to professional services revenue growth of approximately $1.5 million and growth in all product lines within this category. In 2021, mature product revenue was 39% of total revenue compared to 68% in the prior year. Mature product revenue decreased by 16% compared to 2020. The decrease in mature product revenue was due primarily to decreases in most mature product categories, offset by QuickPCI product orders.

Gross Profit. The table below sets forth the changes in gross profit for fiscal year ended January 2, 2022, as compared to fiscal year ended January 3, 2021 (in thousands, except percentage data):

	Fiscal Years					
	2021		2020			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Year-Over-Year Change	
Revenue	$ 12,685	100%	$ 8,634	100%	$ 4,051	47%
Cost of revenue	5,266	42%	4,386	51%	880	20%
Gross profit	$ 7,419	58%	$ 4,248	49%	$ 3,171	75%

The increase in gross profit and gross profit percentage was substantially due to strong revenue growth in new products, primarily in eFPGA IP license, connectivity, and sensors combined with higher margin professional engineering services in fiscal 2021. The sale of inventories that were previously written-off was approximately $123,000 and $65,000 in fiscal 2021 and fiscal 2020, respectively. Inventory written-down in 2021 was approximately $225,000 compared to $199,000 in 2020.

In 2021 and 2020, the Company capitalized costs of approximately $533 thousand and $801 thousand, respectively, associated with internal-use software. For fiscal years 2021 and 2020 the Company recognized $278 thousand and $148 thousand, respectively, for amortization of internal-use software in cost of goods sold on its Consolidated Statements of Operations.

Our semiconductor products have historically had a long product life cycle and obsolescence has not been a significant factor in the valuation of inventories. However, as we pursue opportunities in the IoT market and continue to develop new CSSPs and products, we believe our product life cycle may be shorter, which will increase the potential for obsolescence. In general, our standard manufacturing lead times are longer than the binding forecasts we receive from customers.

Operating Expenses. The table below sets forth the changes in operating expenses for fiscal year ended January 2, 2022, as compared to fiscal year ended January 3, 2021 (in thousands, except percentage data):

	Fiscal Years					
	2021		2020			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Year-Over-Year Change	
R&D expenses	$ 6,927	55%	$ 7,544	87%	$ (617)	(8)%
SG&A expenses	$ 8,008	63%	$ 6,820	79%	$ 1,188	17%
Restructuring costs	$ —	—%	$ 753	9%	$ (753)	100%
Total operating expenses	$ 14,935	(118)%	$ 15,117	(175)%	$ (182)	(1)%

Research and Development Expenses. Our research and development, or R&D, expenses consist primarily of personnel, overhead and other costs associated with System on Chip (SoC) and software development, programmable logic design, AI and eFPGA development. R&D expenses were $6.9 million and $7.5 million in 2021 and 2020, respectively, which represented 55% and 87%, respectively, of revenue for those periods. The $0.6 million decrease in R&D expenses in 2021 as compared to 2020 was primarily attributable to lower compensation costs, including stock-based compensation resulting from the reduced head-count given effect by the restructuring plan implemented in January 2020. Lower outside service costs and lower travel expenses due to COVID-19 also contributed to the decrease of R&D expenses. In 2021, 2020, and 2019, the Company capitalized costs of approximately $533 thousand, $801 thousand, and $365 thousand, respectively, associated with internal-use software.

Selling, General and Administrative Expenses. Our selling, general and administrative, or SG&A, expenses consist primarily of personnel and related overhead costs for sales, marketing, finance, administration, human resources and general management. SG&A expenses were $8.0 million and $6.8 million in 2021 and 2020, respectively, which represented 63% and 79% of revenue for those periods. The $1.2 million increase in SG&A expenses in 2021 as compared to 2020 was primarily attributable to outside services of $1.2 million, inclusive of consulting and small increases in other minor spend offset by decreases in salaries of $0.3million.

Restructuring. In January 2020, the Company implemented a restructuring plan to lower annual operating expenses. The restructuring plan was approved by the Company's Board of Directors on January 24, 2020. Pursuant to the restructuring plan, the Company recorded $753,000 of restructuring charges during fiscal year 2020, consisting primarily of employee severance related costs and facilities costs. See Note 1 to the Consolidated Financial Statements for additional information.

Interest Expense and Interest Income and Other Expense, net. The table below sets forth the changes in interest expense and interest income and other expense, net, for the fiscal year ended January 2, 2022, as compared to fiscal year ended January 3, 2021 (in thousands, except percentage data):

	Fiscal Years		Year-Over-Year Change	
	2021	2020	Amount	Percentage
Interest income (expense)	$ (130)	$ (328)	$ 198	(60)%
Gain on forgiveness of PPP Loan	1,190	-	1,190	100%
Interest income and other (expense), net	(43)	97	(140)	(144)%
	$ 1,017	$ (231)	$ 1,248	(540)%

Interest expense relates primarily to our line of credit facility and our PPP Loan. Interest income and other expenses, net, relates to the interest earned on our money market accounts and foreign exchange gain or losses recorded. In fiscal 2021, the Company's PPP loan was forgiven under the Federal Government's CARES act. As a result, the Company subsequently recognized a gain of approximately $1.2 million on its Consolidated Statement of Operations for fiscal 2021.

Provision for Income Taxes. The table below sets forth the changes in provision for income taxes in the fiscal year ended January 2, 2022, as compared to the fiscal year ended January 3, 2021 (in thousands, except percentage data):

	Fiscal Years		Year-Over-Year Change	
	2021	**2020**	**Amount**	**Percentage**
Provision for income taxes	$ 119	$ 51	$ 68	133%

Income tax expense for 2021 relates primarily to foreign income tax provision on our foreign entities, primarily India and the UK. The income tax expense for 2020 primarily relates to the deferred tax liability arising from intangible assets acquired from the acquisition of SensiML which offsets a released a portion of the Company's valuation allowance outside of acquisition accounting.

As of the end of 2021, our ability to utilize our U.S. deferred tax assets in future periods is uncertain and, accordingly, we have recorded a full valuation allowance against the related U.S. deferred tax assets. We will continue to assess the realizability of deferred tax assets in future periods.

Comparison of Fiscal Years 2020 and 2019

For discussion related to the results of operations and changes in financial condition for fiscal 2020 compared to fiscal 2019, please refer to “Part II, Item 7. Management’s Discussion and Analysis of Financial Conditions and Results of Operations” in our fiscal 2020 Form 10-K, which was originally filed with the SEC on March 23, 2021.

Liquidity and Capital Resources

We have financed our operating losses and capital investments through sales of common stock, capital and operating leases, a revolving line of credit and cash flows from operations. As of January 2, 2022, the Company's principal sources of liquidity consisted of cash, cash equivalents and restricted cash of $19.6million, including $15.0 million drawn down from its revolving line of credit ("Revolving Facility") with Heritage Bank of Commerce ("Heritage Bank"). Subsequent to 2021, in February 2022, the Company sold 310,000 shares of its common stock in a registered direct offering. The February 2022 share placement resulted in gross cash proceeds of approximately $1.5 million. See Note 16 to the Consolidated Financial Statements for additional information.

Credit Agreement

On September 28, 2018, we entered into a Loan and Security Agreement ("Loan Agreement") with Heritage Bank. The Loan Agreement provided for, among other things, the Revolving Facility, with aggregate commitments of $9.0 million.

On December 21, 2018, we entered into an Amended and Restated Loan and Security Agreement (the "Amended and Restated Loan Agreement") with Heritage Bank to replace its entirety of the Loan Agreement. The Amended and Restated Loan Agreement increased the Revolving Facility from $9.0 million to $15.0 million. The Amended and Restated Loan Agreement requires the Company to maintaining at least $3.0 million in unrestricted cash at Heritage Bank.

On November 6, 2019, we Company entered into a First Amendment to the Amended and Restated Loan Agreement with Heritage Bank to extend the maturity date of the Revolving Facility for one year through September 28, 2021. Under this amendment, the Revolving Facility advances shall bear interest, on the outstanding daily balance thereof, at a rate per annum equal to the greater of (i) one half of one percentage point (0.50%) above the prime rate, or (ii) five and one half of one percentage points (5.50%).

On December 11, 2020, we entered into a Second Amendment (the "Second Amendment") to the Amended and Restated Loan Agreement with Heritage Bank. The Second Amendment extended the loan maturity date for one year through September 28, 2022 and amended the interest rate to a rate per annum equal to one half of one percentage point (0.50%) above the prime rate.

On August 16, 2021, the Company entered into a Third Amendment to the Amended and Restated Loan Agreement with Heritage Bank (the "Third Amendment"). The Third Amendment (a) waived the Company’s non-compliance with the minimum cash covenant which obligated the Company to maintain at least $3.0 million of unrestricted cash at all times and (b) amended this obligation such that the Company shall now be required to maintain unrestricted cash in its accounts at the Bank in an amount of at least $3.0 million measured i) immediately prior to the funding of any credit extension, and ii) at all times that any advance is outstanding.

On November 16, 2021, the Company entered into a Fourth Amendment (the “Fourth Amendment”) to the Amended and Restated Loan Agreement with Heritage Bank. The Fourth Amendment extended the loan maturity date through December 31, 2023, and amended and restated an annual, non-refundable Facility Fees of Forty-Five Thousand Dollars ($45,000)- due, prorated to approximately $11 thousand, on December 31, 2021 and in full on each anniversary of the Closing Date of November 16, for so long as the Revolving Facility is in place.

On January 2, 2022 and January 3, 2021, the Company had $15.0 million of outstanding revolving line of credit with interest rates of 3.75% and 3.75%, respectively. We were in compliance with all loan covenants under the Amended and Restated Loan Agreement, as amended, as of the end of the current reporting period. See Note 1 and Note 7 to the Consolidated Financial Statements for additional information.

Common Stock Offerings

On June 22, 2020, we closed an underwritten public offering of 2.5 million shares of common stock, $0.001 par value per share at a price of $3.50 per share, which included 141,733 additional shares pursuant to the underwriters' exercise of their over-allotment option. We received net proceeds from the offering of approximately $8.1 million, net of underwriter's commission and other offering expenses. See Note 11 to the Consolidated Financial Statements for additional information.

On September 22, 2021, the Company entered into a Share Subscription Agreement for the sale of 125,000 shares of our common stock (the "Private Placement"). On September 30, 2021, the Company entered into a Common Stock Purchase Agreement for the sale of 73,664 shares of our common stock, in a registered direct offering pursuant to our effective shelf registration statement on Form S-3 (File No. 333-230352) (the "Registered Direct Offering," and together with the Private Placement, the "Share Placements"). The net proceeds to the Company from the Share Placements in aggregate, after deducting equity issuance costs of approximately $45,000, was approximately $1.0 million. See Note 11 to the Consolidated Financial Statements for additional information.

Subsequent to 2021, in February 2022, the Company sold 310,000 shares of its common stock in a registered direct offering. These February 2022 financing resulted in gross cash proceeds of approximately $1.5 million. See Note 16 to the Consolidated Financial Statements for additional information.

Paycheck Protection Program

On May 6, 2020, we entered into a loan agreement with Heritage Bank for a loan of $1.2 million pursuant to the Paycheck Protection Program, or PPP Loan under the Coronavirus Aid, Relief, and Economic Security Act enacted on March 27, 2020, or CARES Act. On June 5, 2020, the President of the United States of America signed into law the Paycheck Protection Flexibility Act ("PPPFA") to address many concerns expressed by the small business community. As of September 27, 2020, we fully utilized the loan proceeds in compliance with PPPFA guidelines. We applied for the full loan forgiveness in the fourth quarter of 2020. On January 26, 2021 we received a notice from Heritage Bank that amounts under the PPP Loan had been forgiven. See Note 7 to the Consolidated Financial Statements for additional information.

Cash Flows

As of January 2, 2022, most of our cash and cash equivalents were invested in a Heritage Bank Money Market account. As of January 2, 2022, our interest-bearing debt consisted of $0.7 million outstanding under finance leases and $15.0 million outstanding under our Revolving Facility. See Note 7 to the Consolidated Financial Statements for additional information.

Cash balances held at our foreign subsidiaries were approximately $401,000 and $342,000 at January 2, 2022 and January 3, 2021, respectively. Earnings from our foreign subsidiaries are currently deemed to be indefinitely reinvested. We do not expect such reinvestment to affect our liquidity and capital resources, and we continually evaluate our liquidity needs and ability to meet global cash requirements as a part of our overall capital deployment strategy. Factors which affect our liquidity, capital resources and global capital deployment strategy include anticipated cash flows, the ability to repatriate cash in a tax efficient manner, funding requirements for operations and investment activities, acquisitions and divestitures and capital market conditions.

In summary, our cash flows were as follows (in thousands):

	Fiscal Year		
	2021	**2020**	**2019**
Net cash (used in) operating activities	$ (2,859)	$ (11,594)	$ (12,638)
Net cash (used in) investing activities	(718)	(921)	(288)
Net cash provided by financing activities	434	7,600	22,862

Net Cash from Operating Activities

In 2021, net cash used in operating activities was $2.9 million, which was primarily due to a net loss of $6.6 million, adjusted for non-cash charges of $2.2 million. Non-cash charges consisted primarily stock-based compensation expense of $2.5 million and depreciation and amortization of long-lived assets and certain definite-lived intangible assets of $0.6 million. In addition, changes in working capital accounts provided cash of $3.1 million as a result of decreases in accounts receivable $0.3 million, inventory of $0.4 million and other assets of $0.4 million, and increases in accounts payable of $0.4 million and accrued liabilities of $0.3 million, partially offset by cash inflow from a decrease in deferred revenue of $0.4 million.

In 2020, net cash used in operating activities was $6.7 million, which was primarily due to a net loss of $11.2 million, adjusted for non-cash charges of $2.8 million. Non-cash charges consisted primarily stock-based compensation expense of $1.7 million and depreciation and amortization of long-lived assets and certain definite lived intangible assets of $0.8 million. In addition, changes in working capital accounts provided cash of $1.6 million as a result of decreases in accounts receivable $0.3 million, inventory of $0.4 million and other assets of $0.5 million, and increases in accounts payable of $0.3 million and accrued liabilities of $0.2 million, partially offset by cash inflow from a decrease in deferred revenue of $0.1 million.

Net Cash from Investing Activities

Net cash used for investing activities in 2021 was approximately $0.7 million, which was primarily attributable to the capitalization of internal use software of $533 and capital expenditures primarily related to computer equipment of $185,000.

Net cash used for investing activities in 2020 was $1.1 million, which was primarily attributable to the leasehold improvements and computer equipment atthe new office premises of $253,000 and capitalization of internal use software of $801 thousand.

Net Cash from Financing Activities

In 2021, net cash provided by financing activities was $0.4 million, primarily attributable to the collective net proceeds of approximately $1.0 million related to the issuance of 198,664 shares of common stock sold on September 30, 2021. The proceeds from the share issuances were partially offset by $0.6 million in payments related to financing leases.

In 2020, net cash provided by financing activities was $9.0 million, primarily attributable to the net proceeds of $8.1 million from the issuance of 2.5 million shares of common stock in June 2020 and over allotment of 141,733 share to underwriters in July 2020, and proceeds from the PPP Loan of $1.2 million, partially offset by $0.3 million for scheduled repayments of finance lease obligations and tax payments related to net settlement of stock awards.

We require substantial cash to fund our business. However, we believe that our existing cash and cash equivalents, together with available financial resources from the Revolving Facility will be sufficient to satisfy our operations and capital expenditures over the next twelve months. Our Revolving Facility will expire in December 2023. Further, any violations of debt covenants may restrict our access to any additional cash draws from the revolving line of credit, and may require our immediate repayment of the outstanding debt amounts. After the next twelve months, our cash requirements will depend on many factors, including our level of revenue and gross profit, the market acceptance of our existing and new products, the levels at which we maintain inventories and accounts receivable, costs of securing access to adequate manufacturing capacity, new product development efforts, capital expenditures and the level of our operating expenses. In order to satisfy our longer-term liquidity requirements, we may be required to raise additional equity or debt financing. There can be no assurance that financing will be available at commercially acceptable terms or at all.

Contractual Obligations and Commercial Commitments

The following table summarizes our non-cancelable contractual obligations and commercial commitments as of the end of 2021 and the effect such obligations and commitments are expected to have on our liquidity and cash flows in future fiscal periods (in thousands):

	Payments Due by Period				
	Total	**Less than 1 year**	**1-3 Years**	**4-5 Years**	**More than 5 Years**
Contractual cash obligations:					
Operating leases	$ 937	$ 409	$ 528	$ —	$ —
Finance software lease obligations	689	452	237	—	—
Wafer purchases (1)	972	972	—	—	—
Other purchase commitments	939	878	61	—	—
Total contractual cash obligations	3,537	2,711	826	—	—
Other commercial commitments					
Revolving line of credit (2)	15,000	15,000	—	—	—
Total commercial commitments	15,000	15,000	—	—	—
Total contractual obligations and commercial commitments	$ 18,537	$ 17,711	$ 826	$ —	$ —

(1) Certain of our wafer manufacturers require us to forecast wafer starts several months in advance. We are committed to take delivery of and pay for a portion of forecasted wafer volume.

(2) The current maturity date on our Revolving line of credit is December 31, 2023. However, we include this amount in the less than 1 year category due to the revolving nature of the balance and our expected use of the line of credit. See Note 7 to the Consolidated Financial Statements for additional information.

Concentration of Suppliers

We depend on a limited number of contract manufacturers, subcontractors, and suppliers for wafer fabrication, assembly, programming and testing of our devices, and for the supply of programming equipment. These services are typically provided by one supplier for each of our devices. We generally purchase these single or limited source services through standard purchase orders. Because we rely on independent subcontractors to perform these services, we cannot directly control product delivery schedules, costs or quality levels. Our future success also depends on the financial viability of our independent subcontractors. These subcontract manufacturers produce products for other companies, and we must place orders in advance of expected delivery. As a result, we have only a limited ability to react to fluctuations in demand for our products, which could cause us to have an excess or a shortage of inventories of a particular product, and our ability to respond to changes in demand is limited by these suppliers' ability to provide products with the quantity, quality, cost and timeliness that we require. The decision not to provide these services to us or the inability to supply these services to us, such as in the case of a natural or financial disaster, would have a significant impact on our business. Increased demand from other companies could result in these subcontract manufacturers allocating available capacity to customers that are larger or have long-term supply contracts in place and we may be unable to obtain adequate foundry and other capacity at acceptable prices, or we may experience delays or interruption in supply. Additionally, volatility of economic, market, social and political conditions in countries where these suppliers operate may be unpredictable and could result in a reduction in product revenue or increase our cost of revenue and could adversely affect our business, financial condition and results of operations.

Off-Balance Sheet Arrangements

We do not maintain any off-balance sheet partnerships, arrangements or other relationships with unconsolidated entities or others, often referred to as structured finance or special purpose entities, which are established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Recently Issued Accounting Pronouncements

See Note 2 to the Consolidated Financial Statements for a full description of recent accounting pronouncements, including the expected dates of adoption and estimated effects on financial condition and results of operations, which is incorporated herein by reference.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not applicable.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	Page
Report of Independent Registered Public Accounting Firm- (Moss Adams LLP, San Francisco, CA, PCAOB ID: 659)	38
Consolidated Balance Sheets as of January 2, 2022 and January 3, 2021	40
Consolidated Statements of Operations for the Fiscal Years 2021, 2020 and 2019	41
Consolidated Statements of Cash Flows for the Fiscal Years 2021, 2020 and 2019	42
Consolidated Statements of Stockholders' Equity for the Fiscal Years 2021, 2020 and 2019	43
Notes to Consolidated Financial Statements	44

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of
QuickLogic Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of QuickLogic Corporation (the "Company") as of January 2, 2022 and January 3, 2021, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended January 2, 2022, and the related notes and schedules (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Company as of January 2, 2022 and January 3, 2021, and the consolidated results of its operations and its cash flows for each of the three years in the period ended January 2, 2022, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated 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 consolidated 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 consolidated financial statements, whether due to error or fraud, and performing procedures to respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated 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 consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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

Valuation of Inventory

As described in Notes 1 and 4 to the consolidated financial statements, the Company's inventories balance was $2.1million as of January 2, 2022 The Company values its inventories at lower of standard cost or net realizable value. Standard cost approximates actual cost on a first-in, first-out basis. The Company writes down inventory that has become obsolete, inventory that has a cost basis in excess of its expected net realizable value, and inventory in excess of expected requirements.

The estimate of excess quantities is subjective and primarily dependent on the estimates of future demand for a particular product. Changes in assumptions of product demand could have a significant impact on the amount of write-down recorded. The valuation of inventories requires management to make significant assumptions and complex judgments about the future salability of the inventory and the value of obsolete and unmarketable inventory. These assumptions include the assessment of market conditions and trends, sales forecasts, historic usage, expected demand, anticipated sales price, the stage in the product life cycle of its customers' products, new product development schedules, the effect new products might have on the sale of existing products, product obsolescence, customer design activity, customer concentrations, product merchantability and other factors.

We identified the valuation of inventories, in particular the estimates for excess quantities and obsolescence, as a critical audit matter, because of the significant assumptions and subjective judgments used by management, which in turn led to the use of subjective auditor judgment and audit effort to address the matter.

The primary procedures we performed to address this critical audit matter included:

- Evaluating management's approach for developing the estimates for excess and obsolete inventories by:
  - Testing the methodology utilized to calculate the write-downs,
  - Assessing the appropriateness of the formulaic calculation and management adjustments by product type,
  - Testing the mathematical accuracy of the formulaic calculation, and
  - Performing inquiries with management as to the composition of the reserve for aged inventory items without recent sales.
- Evaluating the reasonableness of the significant assumptions used by management including those related to future demand by:
  - Testing management's ability to accurately forecast sales by comparing management's prior-period sales forecasts to actual results, and
  - Performing inquiries with nonfinancial personnel, including sales and production employees, regarding obsolete or discontinued inventory items and other factors to corroborate management's assertions regarding qualitative judgments about excess and obsolete inventories or unrecorded reserves.
- Testing the completeness, accuracy, and relevance of the underlying data used in management's estimate and calculations related to the application of the methodology to specific inventory categories by agreement to supporting documentation and recalculation.

/s/ Moss Adams LLP

San Francisco, California
March 22, 2022

We have served as the Company's auditor since 2016.

QUICKLOGIC CORPORATION
CONSOLIDATED BALANCE SHEETS
(in thousands, except par value amount)

	January 2, 2022	January 3, 2021
ASSETS		
Current assets:		
Cash and cash equivalents and restricted cash	$ 19,605	$ 22,748
Accounts receivable, net of allowances for doubtful accounts of $62 and $0, respectively	1,294	1,688
Inventories	2,078	2,688
Prepaid expenses and other current assets	1,181	1,066
Total current assets	24,158	28,190
Property and equipment, net	499	548
Capitalized internal-use software, net	1,241	986
Right of use assets, net	1,529	1,839
Intangible assets, net	752	860
Investment in privately-held non-affiliate	300	—
Goodwill	185	185
Other assets	309	280
TOTAL ASSETS	$ 28,973	$ 32,888
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Revolving line of credit	$ 15,000	$ 15,000
Trade payables	934	935
Accrued liabilities	1,665	1,340
Deferred revenue	455	52
Lease liabilities, current	819	685
Total current liabilities	18,873	18,012
Long-term liabilities:		
Lease liabilities, non-current	744	1,197
Paycheck Protection Program loan	—	1,192
Other long-term liabilities	147	
Total liabilities	19,764	20,401
Commitments (Note 15)		
Stockholders' equity:		
Preferred stock, $0.001 par value; 10,000 shares authorized; no shares issued or outstanding	—	—
Common stock, $0.001 par value; 200,000 shares authorized; 11,863 and 11,094 shares issued and outstanding as of January 2, 2022 and January 3, 2021, respectively	12	11
Additional paid-in capital	310,222	306,885
Accumulated deficit	(301,025)	(294,409)
Total stockholders' equity	9,209	12,487
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 28,973	$ 32,888

The accompanying notes form an integral part of these Consolidated Financial Statements.

QUICKLOGIC CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share amounts)

	Fiscal Years		
	2021	**2020**	**2019**
Statements of Operations:			
Revenue	$ 12,685	$ 8,634	$ 10,310
Cost of revenue	5,266	4,386	4,405
Gross profit	7,419	4,248	5,905
Operating expenses:			
Research and development	6,927	7,544	12,350
Selling, general and administrative	8,008	6,820	8,918
Restructuring costs	—	753	—
Loss from operations	(7,516)	(10,869)	(15,363)
Interest expense	(130)	(328)	(350)
Gain on forgiveness of PPP Loan	1,192	—	—
Interest income and other expense, net	(43)	97	189
Loss before income taxes	(6,497)	(11,100)	(15,524)
Provision for (benefit from) income taxes	119	51	(80)
Net loss	$ (6,616)	$ (11,151)	$ (15,444)
Net loss per share: (1)			
Basic and diluted	$ (0.57)	$ (1.14)	$ (2.02)
Weighted average shares: (1)			
Basic and diluted	11,535	9,781	7,663

Note: Net loss equals to comprehensive loss for all years presented.

The accompanying notes form an integral part of these Consolidated Financial Statements.

QUICKLOGIC CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Fiscal Years		
	2021	**2020**	**2019**
Cash flows from operating activities:			
Net loss	$ (6,616)	$ (11,151)	$ (15,444)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	626	817	1,201
Stock-based compensation	2,526	1,739	3,144
Write-down of inventories	225	199	94
Gain on forgiveness of PPP Loan	(1,192)	—	—
Loss (gain) on disposal of equipment	(5)	44	4
Tax benefit from acquisition	—	—	(185)
Bad debt expense	62	—	—
Changes in operating assets and liabilities:			
Accounts receivable	332	303	218
Inventories	385	373	483
Other assets	(444)	533	229
Trade payables	367	298	(456)
Accrued liabilities	325	207	(1,024)
Deferred income	403	(106)	158
Other long-term liabilities	147	—	(16)
Net cash used in operating activities	(2,859)	(6,744)	(11,594)
Cash flows from investing activities:			
Capital expenditures for property and equipment	(185)	(253)	(576)
Capitalized internal-use software	(533)	(801)	(365)
Cash received from business acquisition	—	—	20
Net cash used in investing activities	(718)	(1,054)	(921)
Cash flows from financing activities:			
Payment of finance lease obligations	(378)	(270)	(365)
Proceeds from PPP loan	—	1,191	—
Proceeds from line of credit	60,000	57,000	46,000
Repayment of line of credit	(60,000)	(57,000)	(46,000)
Proceeds from issuance of common stock	1,342	9,296	9,437
Stock issuance costs	(45)	(1,147)	(1,181)
Taxes paid related to net settlement of equity awards	(485)	(72)	(291)
Net cash provided by financing activities	434	8,998	7,600
Net (decrease) increase in cash, cash equivalents and restricted cash	(3,143)	1,200	(4,915)
Cash, cash equivalents and restricted cash at the beginning of the period	22,748	21,548	26,463
Cash, cash equivalents, and restricted cash at the end of the period	$ 19,605	$ 22,748	$ 21,548
Supplemental disclosures of cash flow information:			
Interest paid	$ 77	$ 277	$ 300
Income taxes paid	$ 73	$ 24	$ 126
Supplemental schedule of non-cash investing and financing activities:			
Fair value of common stock issued as consideration for business acquisition	$ —	$ —	$ 903
Finance lease obligation to finance capital expenditures	$ 690	$ 670	$ 471

The accompanying notes form an integral part of these Consolidated Financial Statements.

QUICKLOGIC CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	Common Stock				
	Par Value		Additional Paid-In	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Deficit	Equity
Balance at December 30, 2018	6,823	$ 7	$ 285,062	$ (267,814)	$ 17,255
Common stock issued under stock plans and employee stock purchase plans	110	—	(37)	—	(37)
Common stock offering, net of issuance costs	1,314	1	8,001	—	8,002
Common stock issued for SensiML acquisition	84	—	903	—	903
Stock-based compensation	—	—	3,144	—	3,144
Net loss	—	—	—	(15,444)	(15,444)
Balance at December 29, 2019	8,331	8	297,073	(283,258)	13,823
Common stock issued under stock plans and employee stock purchase plans	121	—	(24)	—	(24)
Common stock offering, net of issuance costs	2,642	3	8,097	—	8,100
Common stock issued for SensiML acquisition	—	—	—	—	-
Stock-based compensation	—	—	1,739	—	1,739
Net loss	—	—	—	(11,151)	(11,151)
Balance at January 3, 2021	11,094	11	306,885	(294,409)	12,487
Common stock issued under stock plans and employee stock purchase plans	571	—	(222)	—	(222)
Common stock offering, net of issuance costs	198	1	1,033	—	1,034
Stock-based compensation	—	—	2,526		2,526
Net loss	—	—	—	(6,616)	(6,616)
Balance at January 2, 2022	11,863	$ 12	$ 310,222	$ (301,025)	$ 9,209

The accompanying notes form an integral part of these Consolidated Financial Statements.

NOTE 1-THE COMPANY AND BASIS OF PRESENTATION

QuickLogic Corporation ("QuickLogic" or, the "Company"), was founded in 1988 and reincorporated in Delaware in 1999. The Company enables Original Equipment Manufacturers "(OEMs"), to maximize battery life for highly differentiated, immersive user experiences with Smartphone, Wearable, Hearable, Tablet and Internet-of-Things or IoT devices, Military, Aerospace and Defense products. QuickLogic delivers these benefits through industry leading ultra-low power customer programmable System on Chip or SoC semiconductor solutions, embedded software, and algorithm solutions for always-on voice and sensor processing. The Company is a fabless semiconductor provider of comprehensive, flexible sensor processing solutions, ultra-low power display bridges, and ultra-low power Field Programmable Gate Arrays"(FPGAs"). The Company's wholly owned subsidiary, SensiML Corporation, or SensiML, provides Analytics Toolkit, which is used in many of the applications where the Company's ArcticPro™, eFPGA intellectual property "(IP") plays a critical role. SensiML Analytics toolkit is an end-to-end software suite that provides OEMs a straightforward process for developing pattern matching sensor algorithms using machine learning technology that are optimized for ultra-low power consumption.

QuickLogic's fiscal year ends on the Sunday closest toDecember 31. Fiscal years 2021, 2020 and 2019 ended on January 2, 2022, January 3, 2021 and December 29, 2019, respectively.

COVID-19 - Impact on Business

On January 30, 2020, the World Health Organization ("WHO") declared a global emergency due to the COVID-19 pandemic, and on February 28, 2020, the WHO raised its assessment of the threat from high to very high at a global level. The social and economic impact of the COVID-19 outbreak has continued to increase exponentially since this declaration. The outbreak has resulted in significant governmental measures being implemented to control the spread of COVID-19 and countries across the world continue to manage repeated waves of the pandemic, including variant strains of COVID-19 amid increasing, yet uneven progress toward vaccination. Restrictions on travel, business operations and the movement of people in many regions of the world in which the Company operates, and the imposition of further shelter-in-place or similarly restrictive work-from-home orders would impact many of the Company's offices and employees, including those located in the United States. As a result, the Company has substantially limited the presence of personnel in its offices in several impacted locations, implemented travel restrictions and withdrawn from various industry events. The Company has also experienced some disruption and delays in its supply chain, customer deployment plans, and logistics challenges, including certain limitations on its ability to access customer fulfillment and service sites.

As such, while COVID-19 has had an impact on the Company's financial results on thethree and twelve months ended January 2, 2022, the COVID-19 pandemic and its potential effects on the Company's business in its fiscal 2022 remain dynamic, and the broader implications for its business and future results of operations remain uncertain and cannot be predicted. These implications could include further disruptions or restrictions on the Company's ability to source, manufacture or distribute its products, including temporary disruptions to the facilities of its contract manufacturers in China, Taiwan, Philippines and Singapore, or the facilities of its suppliers and their contract manufacturers globally. Additionally, multiple countries have imposed and may further impose restrictions on business operations and movement of people and products to limit the spread of COVID-19. Delays in production or delivery of components or raw materials that are part of the Company's global supply chain due to restrictions imposed to limit the spread of COVID-19 could delay or inhibit its ability to obtain the supply of components and finished goods. If COVID-19 becomes more prevalent in the locations where the Company, its customers or suppliers conduct business, or the Company experiences more pronounced disruptions in its operations, the Company may experience constrained supply or curtailed demand thatmay materially adversely impact its business and results of operations. In addition, any other widespread health crisis that could adversely affect global and regional economies, financial markets and overall demand environment for the Company's products could have a material adverse effect on the Company's business, cash flows or results of operations. It is difficult to accurately predict the full impact that COVID-19 will have on the Company's future results from operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic and related containment measures. The Company will continue to closely monitor the pandemic's associated effects on all aspects of the business.

Restructuring

In January 2020, the Company implemented a restructuring plan to lower annual operating expenses. The restructuring plan was approved by the Company's Board of Directors on January 24, 2020. Pursuant to the restructuring plan, the Company recorded $753,000 of restructuring charges during the twelve months of fiscal year 2020, consisting primarily of employee severance related costs and facilities costs. Restructuring activities were completed in fiscal 2020.

Liquidity

The Company has financed its operations and capital investments through sale of common stock, capital and operating leases, a revolving line of credit and cash flows from operations. As of January 2, 2022, the Company's principal sources of liquidity consisted of cash and cash equivalents of $19.6 million including $15.0 million drawn down from its line of credit, or Revolving Facility with Heritage Bank of Commerce ("Heritage Bank").

On September 28, 2018, the Company entered into a Loan and Security Agreement (the "Loan Agreement"), with Heritage Bank. The Loan Agreement provided for, among other things, a revolving line of credit facility (the "Revolving Facility") with aggregate commitments of $9.0 million.

On December 21, 2018, the Company entered into the Amended and Restated Loan Agreement with Heritage Bank to replace in its entirety the Loan Agreement (the "Amended and Restated Loan Agreement"). The Amended and Restated Loan Agreement with Heritage Bank increased the Revolving Facility from $9.0 million to $15.0 million. The Amended and Restated Loan Agreement requires the Company to maintain at least $3.0 million in unrestricted cash at Heritage Bank.

On November 6, 2019, the Company entered into a First Amendment to the Amended and Restated Loan Agreement to extend the maturity date forone year through September 28, 2021. Under this amendment the Revolving Facility advances shall bear interest, on the outstanding daily balance thereof, at a rate per annum equal to the greater of (i) one half of one percentage point (0.50%) above the prime rate, or (ii) five and one half of one percentage points (5.50%).

On December 11, 2020, the "Company entered into a Second Amendment (the "Second Amendment") to the "Amended and Restated Loan Agreement with Heritage Bank. The Second Amendment extended the loan maturity date for one year through September 28, 2022 and amended the interest to a rate per annum equal toone half of one percentage point (0.50%) above the prime rate.

On August 16, 2021, the Company entered into a Third Amendment to the Amended and Restated Loan Agreement with Heritage Bank (the "Third Amendment"). The Third Amendment (a) waived the Company's non-compliance with the minimum cash covenant which obligated the Company to maintain at least $3.0 million of unrestricted cash at all times and (b) amended this obligation such that the Company shall now be required to maintain unrestricted cash in its accounts at the Bank in an amount of at least $3.0 million measured i) immediately prior to the funding of any credit extension, and ii) at all times that any advance is outstanding.

On November 16, 2021, the Company entered into a Fourth Amendment (the "Fourth Amendment") to the Amended and Restated Loan Agreement with Heritage Bank originally entered into on December 21, 2018 (the "Amended and Restated Loan Agreement"). The Fourth Amendment extended the loan maturity date through December 31, 2023 and amended and restated an annual, non-refundable Facility Fees of Forty-Five Thousand Dollars ($45,000) due, prorated, on December 31, 2021 and in full on each anniversary of the Closing Date for so long as the Revolving Facility is in place.

On January 2, 2022 and January 3, 2021, the Company had $15.0 million of outstanding revolving line of credit with interest rates of 3.75% and 3.75%, respectively. We were in compliance with all loan covenants under the Amended and Restated Loan Agreement, as amended as of the end of the current reporting period. See Note 7 to the Consolidated Financial Statements for additional information.

On June 21, 2019, the Company closed its underwritten public offering of 1.3 million shares of common stock, $0.001 par value per share at a price of $7.0 per share, which included 171,429 shares issued pursuant to the underwriters' full exercise of their over-allotment option. The Company received net proceeds of approximately $8.0 million, after deducting underwriting commissions and other offering-related expenses. See Note 11
to the Consolidated Financial Statements for additional information.

On June 22, 2020, the Company closed an underwritten public offering of 2.5 million shares of common stock, $0.001 par value per share at a price of $3.50 per share, which included 141,733 additional shares pursuant to the underwriters' exercise of their over-allotment option. The Company received net proceeds from the offering of approximately $8.1 million, net of underwriter's commission and other offering expenses. See Note 11.

On September 22, 2021, the Company entered into a Share Subscription Agreement for the sale of 125,000 shares of our common stock (the "Private Placement"). On September 30, 2021, the Company entered into a Common Stock Purchase Agreement for the sale of 73,664 shares of our common stock, in a registered direct offering pursuant to our effective shelf registration statement on Form S-3 (File No. 333-230352) (the "Registered Direct Offering," and together with the Private Placement, the "Share Placements"). The net proceeds to the Company from the Share Placements in aggregate, after deducting equity issuance costs of approximately $45,000, was approximately $1 million. Subsequent to 2021, in February 2022, the Company sold 310,000 shares of its common stock in a registered direct offering. The February 2022 share placements resulted in gross cash proceeds of approximately $1.5 million. See Note 16.

The Company currently uses its cash to fund its working capital, to accelerate the development of next generation products and for general corporate purposes. Based on past performance and current expectations, the Company believes that its existing cash and cash equivalents, together with $1.5 million gross cash proceeds from the February 2022 financing, revenues from operations, and available financial resources from the Revolving Facility with Heritage Bank will be sufficient to fund its operations and capital expenditures and provide adequate working capital for the next twelve months.

Various factors affect the Company's liquidity, including, among others: the level of revenue and gross profit as a result of the cyclicality of the semiconductor industry; the conversion of design opportunities into revenue; market acceptance of existing and new products including solutions based on its eFPGA IP, ArcticLink® and PolarPro® platforms, eFPGA, EOS S3 SoC, Quick AI solution, and SensiML software; fluctuations in revenue as a result of product end-of-life; fluctuations in revenue as a result of the stage in the product life cycle of its customers' products; costs of securing access to and availability of adequate manufacturing capacity; levels of inventories; wafer purchase commitments; customer credit terms; the amount and timing of research and development expenditures; the timing of new product introductions; production volumes; product quality; sales and marketing efforts; the value and liquidity of its investment portfolio; changes in operating assets and liabilities; the ability to obtain or renew debt financing and to remain in compliance with the terms of existing credit facilities; the ability to raise funds from the sale of equity in the Company; the ability to capitalize on synergies with our newly acquired subsidiary SensiML; the issuance and exercise of stock options and participation in the Company's employee stock purchase plan; and other factors related to the uncertainties of the industry and global economics.

Over the longer term, the Company anticipates that sales generated from its new product offerings, existing cash and cash equivalents, together with financial resources from its Revolving Facility with Heritage Bank, assuming renewal of the Revolving Facility or the Company entering into a new debt agreement with an alternative lender prior to the expiration of the revolving line of credit in December 2023, and its ability to raise additional capital in the public capital markets will be sufficient to satisfy its operations and capital expenditures. However, the Company cannot provide any assurance that it will be able to raise additional capital, if required, or that such capital will be available on terms acceptable to the Company. The inability of the Company to generate sufficient sales from its new product offerings and/or raise additional capital if needed could have a material adverse effect on the Company's operations and financial condition, including its ability to maintain compliance with its lender's financial covenants.

Principles of Consolidation

The consolidated financial statements have been prepared in accordance with Generally Accepted Accounting Principles, in the United States of America or ("US GAAP"), and the applicable rules and regulations of the Securities and Exchange Commission, ("SEC"), and include the accounts of QuickLogic and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

Critical Accounting Policies and Use of Estimates

The preparation of these consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosures of contingent assets and liabilities and the reported amounts of revenue and expenses during the period. Actual results could differ from those estimates, particularly in relation to revenue recognition; the allowance for doubtful accounts; sales returns; valuation of long-lived assets including mask sets; valuation of goodwill; capitalized internal-use software and related amortizable lives and intangibles related to the acquisition of SensiML, including the estimated useful lives of acquired intangible assets, valuation of inventories including identification of excess quantities, market value and obsolescence; measurement of stock-based compensation awards; accounting for income taxes and estimating accrued liabilities.

The methods, estimates and judgments we use in applying our most critical accounting policies have a significant impact on the results we report in our consolidated financial statements. The SEC has defined critical accounting policies as those that are most important to the portrayal of our financial condition and results of operations and require us to make our most difficult and subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain. Based on this definition, our critical policies include revenue recognition and determination of the Stand-Alone Selling Price ("SSP") for certain distinct performance obligations (such as for IP licensing and professional services contracts), sales returns and allowances, valuation of inventories including identification of excess quantities and product obsolescence, allowance for doubtful accounts, valuation of long-lived assets, measurement of stock-based compensation and accounting for income taxes. We believe that we apply judgments and estimates in a consistent manner and that such consistent application results in consolidated financial statements and accompanying notes that fairly represent all periods presented. However, any factual errors or errors in these judgments and estimates may have a material impact on our financial statements.

Licensed Intellectual Property

The Company licenses intellectual property that is incorporated into its products. Costs incurred under license agreements prior to the establishment of technological feasibility are included in research and development expense as incurred. Costs incurred for intellectual property once technological feasibility has been established and that can be used in multiple products are capitalized as a long-term asset. Once a product incorporating licensed intellectual property has production sales, the amount is amortized over the estimated useful life of the asset, generally up to five years.

Revenue Recognition

We recognize revenue in accordance with ASC Topic No. 606 and related ASUs, which provide supplementary guidance, and clarifications. The results for all reporting periods within this Form 10-K, are presented in accordance with the new standard, although comparative information for the prior years have not been restated and continue to be reported under the accounting standards and policies in effect for those periods. Under ASC 606 and related ASUs, revenue is recognized as follows:

Revenue arrangements with customers often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. The Company uses a range of amounts to estimate SSP when each of the products and services are sold separately and determines the discount to be allocated based on the relative SSP of the various products and services when products and services sold are bundled. In instances where SSP is not directly observable, such as when the Company does not sell the product or service separately, it determines the SSP using information that may include market conditions and other observable inputs. The Company typically has more than one SSP for individual products and services due to the stratification of those products and services by customers. In these instances, the Company may use information such as the size of the customer, customer tier, type of the technology used, customer demographics, geographic region and other factors in determining the SSP

We supply standard products that must be programmed before they can be used in an application. Our products may be programmed by us, distributors, end-customers or third parties. We also provide professional engineering services to our customers.

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services.

We determine revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer,
- Identification of the performance obligations in the contract,
- Determination of the transaction price,
- Allocation of the transaction price to the performance obligations in the contract, and
- Recognition of revenue when, or as, we satisfy a performance obligation.

As part of its assessment of each contract, the Company evaluates certain factors including the customer's ability to pay, or credit risk. For each contract, the Company considers the promise to transfer products, each of which is distinct, to be the identified performance obligations. In determining the transaction price, the price stated on the purchase order is typically fixed and represents the net consideration to which the Company expects to be entitled, and therefore there is no variable consideration. As the Company's standard payment terms are less than one year, the Company has elected, as a practical expedient, to not assess whether a contract has a significant financing component. The Company allocates the transaction price to each distinct product based on its relative standalone selling price. The product price as specified on the purchase order is considered the standalone selling price as it is an observable source that depicts the price as if sold to a similar customer in similar circumstances.

Product Revenue

The Company generates most of its revenue by supplying standard hardware products, which must be programmed before they can be used in an application. The Company's contracts with customers are generally for product only, and do not include other performance obligations such as services, extended warranties or other material rights.

The Company recognizes hardware product revenue at the point of time when control of products is transferred to the customers, when the Company's performance obligation is satisfied, which typically occurs upon shipment from the Company's manufacturing site or its headquarters.

Intellectual Property and Software License Revenue

The Company also generates revenue from licensing their intellectual property or IP, software tools and royalties from licensing its technology.

The Company recognizes IP and Software License revenue at the point of time when the control of IP or software license has been transferred.

Some of the IP and Software Licensing contracts with customers contain multiple performance obligations. For these contracts, the Company accounts for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. The Company determines the standalone selling prices based on our overall pricing objectives, taking into consideration market conditions and other factors, including the value of our contracts, type of the customer, customer tier, type of the technology used, customer demographics, geographic locations, and other factors.

There are no variable consideration estimates associated with either combined development and IP arrangements or for standalone arrangements involving either the sale or licensing of IP.

Professional Services Revenue

Professional Services revenue consists of professional engineering fees associated with custom integration of the Company's technology solutions into its customers' products. An initial software arrangement may consist of significant software customization services and support and maintenance services that include post-implementation customer support on a time-and-materials basis as-needed.

The Company customization services revenue based on the duration of the project and specific terms and deliverables unique to each contract:

- an over time model, measured using the input method such as units of labor
- an over time model measured using the output method such as specific deliverables produced
- Time and Material for professional engineering services

For time and material derived revenue, the Company estimates a fully-burdened overhead rate for the labor and any materials required

Due to the nature of the work performed in these arrangements, the estimation of the over-time model is complex and involves significant judgment. In the case of the input methods, the key factors reviewed by management to estimate costs to complete each contract is the estimated labor days-effort necessary to complete the project, budgeted hours, hourly cost to the Company, profit margins, and engineering hours at cut-off when projects extend beyond a reporting period. In relation to the output method, key factors reviewed by the Company are the specific deliverables specified in the contracts with customers. The Company has methods and controls in place for tracking labor-days incurred in completing customization and other professional services as well as quantifying changes in estimates.

Customization professional engineering services contract revenue inclusive of eFPGA IP and customization was approximately$2.7 million f or the year ended January 2, 2022. Professional engineering services revenue was approximately $1.5 million, $0.3 million, and immaterial for the fiscal years of2021, 2020, and 2019, respectively. Professional services revenue is included in revenue on the Company's Consolidated Statements of Operations.

The Company has entered into a revenue contract with a non-affiliate customer, where the customer, will provide cash in addition to shares of common stock as payment in exchange for IP license, know how, and professional engineering services. The customer is a privately-held company, and as such, the common stock is not publicly tradeable. This contract requires the Company to apply significant judgement in the inputs for estimating the fair value of the shares of private company common stock for the purpose of determining the entire consideration received under the contract with the customer. Inputs involved in estimating the fair value of the private company common stock include the selection of a peer company group, the estimated volatility of the equity, based on a basket of peer group public company common stock, the discount rate, discount for a lack of marketability, and time to exit significantly affect the estimated fair value of the non-cash consideration received. Consequently, at January 2, 2022, the Company recognized $300,000 as an investment in a non-affiliate on its consolidated balance sheet and the same corresponding amount in deferred revenue. See Note 9 and Note 14.

Contract Balances

Timing of revenue recognition may differ from the timing of invoicing to the Company's customers due to contractual terms. The Company records contract assets when revenue is recognized prior to invoicing, and a contract liability when revenue is recognized subsequent to invoicing. The contract assets are transferred to receivables when billing occurs and contract liabilities are transferred to revenue once the related performance obligation is satisfied.

Related to the Company's professional services revenue, the Company had Contract assets of approximately $0.3 million included in accounts receivable on its Consolidated Balance Sheet at January 2, 2022 and none at January 3, 2021. Additionally, at January 2, 2022, the Company had contract liabilities, related to its professional services, of $0.3 million included in deferred revenue on its Consolidated Balance Sheet and none at January 3, 2021. See Note 14.

Software as a Service Revenue, or SaaS Revenue

Software products that are offered to customers with a right to use the hosted software over the contract period without taking the possession of it are billed on a subscription basis. Revenue that are billed on a subscription basis is recognized ratably over the contract period.

Maintenance Revenue

The Company recognizes revenue from maintenance ratably over the term of the underlying maintenance contract term. Renewals of maintenance contracts create new performance obligations that are satisfied over the term with the revenues recognized ratably over the term.

Royalty Revenue

The Company recognizes royalty revenue when the later of the following events occurs: (a) The subsequent sale or usage occurs. (b) The performance obligation to which some or all of the sales-based royalty has been allocated has been satisfied

Deferred Revenue

Receivables are recognized in the period we ship the product. Payment terms on invoiced amounts are based on contractual terms with each customer. When we receive consideration, or such consideration is unconditionally due, prior to transferring goods or services to the customer under the terms of a sales contract, we record deferred revenue, which represents a contract liability. We recognize deferred revenue as net sales once control of goods and/or services have been transferred to the customer and all revenue recognition criteria have been met and any constraints have been resolved. We defer the product costs until recognition of the related revenue occurs.

Variable Consideration

The Company does not currently have any revenue contracts with variable consideration.

Assets Recognized from Costs to Obtain a Contract with a Customer

The Company recognizes an asset for the incremental costs of obtaining a contract with a customer, if it expects the benefit of those costs to be longer than one year. The Company has concluded that none of the costs it has incurred to obtain and fulfill its ASC 606 contracts during the years ended January 2, 2022 and January 3, 2021 meet the capitalization criteria, and as such, there are no costs deferred and recognized as assets on the consolidated balance sheets at January 2, 2022, and January 3, 2021.

Practical Expedients and Exemptions

(i) Taxes collected from customers and remitted to government authorities and that are related to the sales of our products are excluded from revenues.

(ii) Sales commissions are expensed when incurred because the amortization period would have been one year or less. These costs are recorded in Selling, general and administrative expense in the Condensed Consolidated Statements of Income.

(iii) We do not disclose the value of unsatisfied performance obligations for (i) contracts with original expected lengths of one year or less or (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for the services performed.

We record allowance for sales returns. Amounts recorded for sales returns for the year ended January 2, 2022 and January 3, 2021 were $13,000 and $30,000 , respectively on the Company's Consolidated Statement of Operations. The allowance for sales returns is based on a historical returns analysis performed on a quarterly basis.

Cost of Revenue

We record all costs associated with product sales and professional services in cost of revenue. These costs include the cost of materials, contract manufacturing fees, shipping costs and quality assurance. Cost of revenue also includes indirect costs such as warranty, excess and obsolete inventory charges, general overhead costs, depreciation and amortization of certain capitalized software. Cost of revenue related to professional services for fiscal 2021 was approximately $0.4 million and de minimis for each of fiscal 2020 and fiscal 2019.

Valuation of Inventories

Inventories are stated at the lower of standard cost or net realizable value. Standard cost approximates actual cost on a first-in, first-out basis. We routinely evaluate quantities and values of our inventories in light of current market conditions and market trends and record reserves for quantities in excess of demand and product obsolescence. The evaluation may take into consideration historic usage, expected demand, anticipated sales price, the stage in the product life cycle of our customers' products, new product development schedules, the effect new products might have on the sale of existing products, product obsolescence, customer design activity, customer concentrations, product merchantability and other factors. Market conditions are subject to change. Actual consumption of inventories could differ from forecasted demand and this difference could have a material impact on our gross margin and inventory balances based on additional provisions for excess or obsolete inventories or a benefit from inventories previously written down. We also regularly review the cost of inventories against estimated market value and record a lower of cost or market reserve for inventories that have a cost in excess of estimated market value, which could have a material impact on our gross margin and inventory balances based on additional write-downs to net realizable value or a benefit from inventories previously written down.

Our semiconductor products have historically had an unusually long product life cycle and obsolescence has not been a significant factor in the valuation of inventories. However, as we pursue opportunities in the IoT market and continue to develop new products, we believe our new product life cycle may be shorter, which could increase the potential for obsolescence. A significant decrease in demand could result in an increase in excess inventory on hand. Although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or frequent new product developments could have a significant impact on the value of our inventory and our results of operations.

Fair Value

The guidance for the fair value option for financial assets and financial liabilities provides companies the irrevocable option to measure many financial assets and liabilities at fair value with changes in fair value recognized in earnings or equity. The Company has not elected to measure any financial assets or liabilities at fair value that were not previously required to be measured at fair value.

The Company holds a non-marketable equity investment in a privately-held, non-affiliated company which is recorded at fair value measured on a non-recurring basis. If an impairment or observable change in fair-value occurs in the period, the changes in fair value are recorded in the consolidated statement of operations. The investment is valued using observable and unobservable inputs or data in an inactive market and the valuation requires significant judgment due to the absence of market prices and inherent lack of liquidity. The estimated fair value is based on quantitative and qualitative factors including subsequent financing activities by the investee. At January 2, 2022, the Company's investment in a privately-held non-affiliate had an estimated fair value of $300,000. The investment was related to non-cash consideration in the form of common stock of the investee received in relation to a revenue contract. Inputs involved in estimating the fair value of the private company common stock include the selection of a peer company group, the estimated volatility of the equity, based on a basket of peer group public company common stock, the discount rate, discount for a lack of marketability, and time to exit significantly affect the estimated fair value of the non-cash consideration received. See Note 9.

Concentration of Risk

The Company's accounts receivables are denominated in U.S. dollars and are derived primarily from sales to customers located in North America, Asia Pacific, and Europe. The Company performs ongoing credit evaluations of its customers and generally does not require collateral. See Note 14 for information regarding concentrations associated with accounts receivable and revenue.

Reverse Stock Split

On November 26, 2019, shareholders of the Company approved an amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split of our outstanding shares of common stock, at a reverse stock split ratio from 1-for-5 to 1-for-15 ("Reverse Stock Split"), as determined by the Board of Directors. On December 6, 2019. our Board of Directors approved the implementation of the Reverse Stock Split at a ratio of 1-for-14. The Reverse Stock Split was intended to bring the Company into compliance with the $1.00 minimum average closing share price requirement for continued listing ("Bid Pricing Rule") on the Nasdaq Capital Market ("Nasdaq"). On January 9, 2020, the Company received a letter from Nasdaq Stock Market LLC stating that the Company had regained compliance with the Bid Price Rule and it considered the matter closed.

NOTE 2-OTHER RELEVANT ACCOUNTING POLICIES

Cash Equivalents and Restricted Cash

The Company considers all short-term, highly liquid investments with an original or a remaining maturity at purchase of ninety days or less to be cash equivalents. The Company's investment portfolio included in cash equivalents is generally comprised of investments that meet high credit quality standards. The Company's investment portfolio consists of money market accounts and funds. Restricted cash represents amounts pledged as cash security related to the use of credit cards.

Foreign Currency Transactions

All of the Company's sales and cost of manufacturing are transacted in U.S. dollars. Accordingly, all monetary assets and liabilities of these foreign operations are translated into U.S. dollars at current period-end exchange rates and non-monetary assets and related elements of expense are translated using historical exchange rates. Income and expense elements are translated to U.S. dollars using the average exchange rates in effect during the period. Gains and losses from the foreign currency transactions of these subsidiaries are recorded as interest income and other expense, net in the Consolidated Statements of Operations.

The Company conducts a portion of its research and development activities in India and has sales and marketing activities in various countries outside of the United States. Most of these international expenses are incurred in local currency. Foreign currency transaction gains and losses, which are not significant, are included in interest income and other expense, net, as they occur. Operating expenses denominated in foreign currencies were approximately 21%, 18%and 19%of total operating expenses in fiscal years 2021, 2020, and 2019 respectively. The Company incurred a majority of these foreign currency expenses in India, the United Kingdom, China, Japan, Taiwan and Korea in fiscal years 2021, 2020, and 2019. The Company has not used derivative financial instruments to hedge its exposure to fluctuations in foreign currency and, therefore, is susceptible to fluctuations in foreign exchange gains or losses in its results of operations in future reporting periods.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets, generally one to seven years. Amortization of leasehold improvements is computed on a straight-line basis over the shorter of the lease term or the estimated useful lives of the assets, generally one to seven years.

Capitalized Internal-Use Software

The Company capitalizes costs related to development of hosted services that the Company provides to its customers and internal use of enterprise-level business and finance software in support of the Company's operational needs. Costs incurred in the application development phase are capitalized and amortized on a straight-line basis over their useful lives, which are generally five years. Costs related to planning and other preliminary project activities and post-implementation activities are expensed as incurred. The Company tests these assets for impairment whenever events or changes in circumstances occur that could impact their recoverability.

Long-Lived Assets

The Company reviews the recoverability of its long-lived assets, such as property and equipment, annually and when events or changes in circumstances occur that indicate that the carrying value of the asset or asset group may not be recoverable. The assessment of possible impairment is based on the Company's ability to recover the carrying value of the asset or asset group from the expected future pre-tax cash flows, undiscounted and without interest charges, of the related operations, as well as the useful lives applied to the assets. If these cash flows are less than the carrying value of the asset or asset group, an impairment loss is recognized for the difference between the estimated fair value and the carrying value, and the carrying value of the related assets is reduced by this difference. The measurement of impairment requires management to estimate future cash flows and the fair value of long-lived assets. During 2021, 2020 and 2019 the Company recognized losses (gain) on equipment with a net book value of ($5,000), $44,000 and $4,000, respectively. Approximately $35,000 of the equipment written-off during fiscal 2020 was included in Restructuring costs on the Company's Statements of Operations for year ended January 3, 2021.

Accounts Receivable Allowance

The Company estimates the amount of uncollectible accounts receivable at the end of each reporting period based on the aging of the receivable balance, current and historical customer trends, and communications with its customers. Amounts are written off only after considerable collection efforts have been made and the amounts are determined to be uncollectible. There were no significant write-off amounts for each of the 2021, 2020, and 2019 fiscal years. At the end of its 2021 and 2020 fiscal years, respectively, the Company had $62,000 and $0 in allowance for bad debts on its Consolidated Balance Sheets.

Warranty Costs

The Company warrants finished goods against defects in material and workmanship under normal use for twelve months from the date of shipment. The Company's liability is limited to the cost of repair or replacement of the defective part. The Company does not consider activities related to such warranties to be a separate performance obligation under ASC 606. The terms and conditions of sale generally do not allow for refunds or product returns other than for warranty repairs. The Company does not have significant product warranty related costs or liabilities for fiscal years 2021, 2020, and 2019.

Leases

The Company accounts for leases under ASC 842 and related ASUs. Under ASC 842, all significant lease arrangements are generally recognized at lease commencement. Operating lease right-of-use ("ROU"), assets and lease liabilities are recognized at the commencement date. A ROU asset and corresponding lease liability is not recorded for leases with an initial term of 12 months or less (short term leases) and the Company recognizes lease expense for these leases as incurred over the lease term.

ROU assets represent the Company's right to use an underlying asset during the reasonably certain lease terms and lease liabilities represent the Company's obligation to make lease payments arising from the lease. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. The Company primarily uses its incremental borrowing rate, based on the information available at commencement date, in determining the present value of lease payments. The operating lease ROU asset also includes any lease payments related to initial direct cost and prepayments and excludes lease incentives. Lease expense is recognized on a straight-line basis over the lease term. The Company has lease agreements with lease and non-lease components, which are generally accounted for separately.

In accordance with ASU No. 2016-02, the Company recognized right-of-use assets of approximately $975,000 and lease liabilities of approximately $939,000 on the Company's Consolidated Balance Sheet as of March 31, 2019, with no material impact to its Consolidated Statements of Operations. In 2020, pursuant its restructuring activities, the Company impaired the remaining right-of-use asset associated with its prior India location amounting to approximately $93,000, which is included with Restructuring costs on the Company's Consolidated Statements of Operations. As of January 2, 2022, the Company's right-of-use assets were approximately $1.5 million and lease liabilities were approximately $1.6 million as presented on the Company's Consolidated Balance Sheet. See Note 8.

Business Combinations

The Company recognizes assets acquired (including goodwill and identifiable intangible assets) and liabilities assumed at fair value on the acquisition date. Subsequent changes to the fair value of such assets acquired and liabilities assumed are recognized in earnings, after the expiration of the measurement period, a period not to exceed 12 months from the acquisition date. Acquisition-related expenses and acquisition-related restructuring costs are recognized in earnings in the period in which they are incurred.

Goodwill and Intangible Assets

Goodwill represents the excess fair value of consideration transferred over the fair value of net assets acquired in business combinations. The carrying value of goodwill and indefinite lived intangible assets are not amortized but are annually tested for impairment during the Company's fourth fiscal quarter, and more often if there is an indicator of impairment.

The Company recognized total goodwill of $185,000 in fiscal 2019 due to tax benefits that arose from intangible assets acquired in the SensiML acquisition including measurement period adjustments, occurring within 12 months from the date of acquisition, and therefore, accounted for under acquisition accounting. The Company's performs its annual goodwill impairment testing during the Company's fourth fiscal quarter. Subsequent to the Company's annual impairment testing in November 2021 and to January 2, 2022, there were no indicators of impairment that gave cause for additional impairment testing of goodwill. No impairment of goodwill has been recognized to date.

Intangible assets with finite useful lives are amortized on a straight-line basis over the periods benefited. The Company reviews the recoverability of its long-lived assets when events or changes in circumstances occur that indicate that the carrying value of the asset or asset group may not be recoverable. The assessment of possible impairment is based on the Company's ability to recover the carrying value of the asset or asset group from the expected future pre-tax cash flows (undiscounted and without interest charges) of the related operations. If these cash flows are less than the carrying value of such asset, an impairment loss is recognized for the difference between estimated fair value and carrying value. The measurement of impairment requires management to estimate future cash flows and the fair value of long-lived assets. The Company performed an annual impairment assessment in November 2021 and deemed no impairment was necessary for the current year. No impairment of intangible assets has been recognized to-date.

Advertising

Costs related to advertising and promotion expenditures are charged to "Selling, general and administrative" expense in the consolidated statements of operations as incurred. Costs related to advertising and promotion expenditures were $47,000 in 2021, $76,000 in 2020, and $146,000 in 2019.

Stock-Based Compensation

The Company accounts for stock-based compensation under the provisions of the amended authoritative guidance, and related interpretations which require the measurement and recognition of expense related to the fair value of stock-based compensation awards. The fair value of stock-based compensation awards is measured at the grant date and re-measured upon modification, as appropriate. The Company uses the Black-Scholes option pricing model to estimate the fair value of employee stock options and rights to purchase shares under the 2019 Stock Plan, and 2009 Stock Plan,
1999 Employee Stock Purchase Plan (" ESPP"), consistent with the provisions of the amended authoritative guidance. The fair value of restricted stock awards ("RSA"), and restricted stock units ("RSU"), is based on the closing price of the Company's common stock on the date of grant.

Using the Black-Scholes pricing model requires us to develop highly subjective assumptions, including the expected term of awards, expected volatility of our stock, expected risk-free interest rate and expected dividend rate over the term of the award. Our expected term of awards is based primarily on our historical experience with similar grants. Our expected stock price volatility for both stock options and ESPP shares is based on the historic volatility of our stock, using the daily average of the opening and closing prices and measured using historical data appropriate for the expected term. The risk-free interest rate assumption approximates the risk-free interest rate of a Treasury Constant Maturity bond with a maturity approximately equal to the expected term of the stock option or ESPP shares.

Since we recognize compensation expense only for awards ultimately expected to vest; therefore, we are required to develop an estimate of the historical pre-vest forfeiture experience and apply this to all stock-based awards. The fair value of restricted stock awards, or RSAs, and restricted stock units, or RSUs, is based on the closing price of our common stock on the date of grant. RSA and RSU awards which vest with service are expensed over the requisite service period. RSAs and RSU awards that are expected to vest based on the achievement of a performance goal are expensed over the estimated vesting period, which is estimated by management. We regularly review the assumptions used to compute the fair value of our stock-based awards and we revise our assumptions as appropriate. See Note 13.

Accounting for Income Taxes

As part of the process of preparing our financial statements, we are required to estimate our income taxes in each of the jurisdictions in which we operate. This process involves estimating our actual current tax exposure together with assessing temporary differences resulting from different tax and accounting treatment of items, such as deferred revenue, allowance for doubtful accounts, the impact of equity awards, depreciation and amortization, and employee-related accruals. These differences result in deferred tax assets and liabilities, which are included on our balance sheets. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income. To the extent we believe that recovery is not likely, we must establish a valuation allowance. To the extent we establish a valuation allowance or increase this allowance in a period, we must include an expense within the tax provision in the statements of operations.

Significant management judgment is required in determining our provision for income taxes, deferred tax assets, liabilities and any valuation allowance recorded against our net deferred tax assets. Our deferred tax assets net of deferred tax liabilities relating to an ROU asset of $0.4 million, consisted primarily of net operating loss carryforwards, depreciation and amortization, amounted to approximately $61 million, tax effected, as of the end of 2021 . In evaluating our ability to recover our deferred tax assets within the jurisdiction from which they arise, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, uncertainty of projecting future taxable income and results of recent operations. As of January 2, 2022 , we had federal and state income tax net operating loss, or NOL, carryforwards of approximately $183.9 million and $94.4 million, respectively, which will expire at various dates from 2022 through 2041. Federal net operating losses generated in 2019 and forward of $55.3 million can be carried forward indefinitely. We had research credit carryforwards of approximately $3.7 million for federal and $4.7 million for state income tax purposes as of January 2, 2022 . If not utilized, the federal carryforwards will expire at various dates from 2022. The California credit can be carried forward indefinitely. We believe that it is more likely thannot that the deferred tax assets and benefits from these federal and state NOL and credit carryforwards will not be realized. In recognition of this risk, we have recorded a valuation allowance of $60 million, tax-effected, as of the end of 2021 , due to uncertainties related to our ability to utilize our U.S. deferred tax assets before they expire.

The Company accounts for uncertainty in income taxes using a two-step approach for recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. The Company classifies the liability for unrecognized tax benefits as current to the extent that it anticipates payment (or receipt) of cash within one year. Interest and penalties related to uncertain tax positions are recognized in the provision for income taxes. Accrued interest and penalties are included within the accrued liabilities line in the Consolidated Balance Sheet.

Concentrations of Credit and Suppliers

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist principally of cash and cash equivalents and accounts receivable. Cash and cash equivalents are maintained with high quality institutions. The Company’s accounts receivables are denominated in U.S. dollars and are derived primarily from sales to customers located in North America, Europe and Asia Pacific. The Company performs ongoing credit evaluations of its customers and generally does not require collateral. See Note 14 for information regarding concentrations associated with accounts receivable.

The Company depends on a limited number of contract manufacturers, subcontractors, and suppliers for wafer fabrication, assembly, programming and test of its devices, and for the supply of programming equipment, and these services are typically provided by one supplier for each of the Company’s devices. The Company generally purchases these single or limited source services through standard purchase orders. Because the Company relies on independent subcontractors to perform these services, it cannot directly control its product delivery schedules, costs or quality levels. The Company’s future success also depends on the financial viability of its independent subcontractors.

Comprehensive Income (Loss)

Comprehensive income (loss) includes all temporary changes in equity (net assets) during a period from non-owner sources. The Company’s comprehensive loss equaled to net loss for all periods presented.

Recently Adopted New Accounting Pronouncements:

In December 2019, the FASB issued ASU No. 2019-12, *Simplifying the Accounting for Income Taxes*, which removes certain exceptions to the general principles of ASC 740, in order to reduce the cost and complexity of its application. These changes include elimination to the exceptions for (1) Intra-period tax allocation, (2) Deferred tax liabilities related to outside basis differences, and (3) Year-to-date losses in interim periods. This standard is effective for the fiscal years beginning after December 15, 2020. The Company adopted ASU No. 2019-12, as of January 4, 2021, without significant impact on its Consolidated Financial Statements.

New Accounting Pronouncements Pending Adoption

In August 2020, the FASB issued ASU No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity’s Own Equity (Subtopic 815-40)*: Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity, which address issues identified as a result of the complexity associated with applying generally accepted accounting principles for certain financial instruments with characteristics of liabilities and equity. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2023, including interim periods within those fiscal years. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. The Board specified that an entity should adopt the guidance as of the beginning of its annual fiscal year. The Company is in process of assessing the impact of ASU No. 2020-06 on its Consolidated Financial Statements.

In May 2021, ASU No. 2021-04, *Issuer’s Accounting for Certain Modifications of Exchanges of Freestanding Equity-Classified Written Call Options,* was issued to clarify the accounting for modifications or exchanges of freestanding equity-classified written call options, such was warrants, that remain equity classified after modification or exchange. This ASU became effective for the Company on January 1, 2022 and is not expected to have a material impact on the consolidated financial statements.

NOTE 3-NET LOSS PER SHARE

Basic net loss per share is computed by dividing net loss available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted net loss per share was computed using the weighted average number of common shares outstanding during the period plus potentially dilutive common shares outstanding during the period under the treasury stock method. In computing diluted net loss per share, the weighted average stock price for the period is used in determining the number of shares assumed to be purchased from the exercise of stock options and warrants.

For 2021, 2020 and 2019, 660,484 shares, 921,000 shares, and 563,000 shares, respectively, associated with equity awards outstanding and the estimated number of shares to be purchased under the current offering period of the 2009 Employee Stock Purchase Plan were not included in the calculation of diluted net loss per share, as they were considered antidilutive due to the net loss the Company experienced during those years. Warrants to purchase up to386,000 shares were issued in connection with May 29, 2018 stock offering were also not included in the diluted loss per share calculation for the year endedJanuary 2, 2022 and January 3, 2021 as they were also considered anti-dilutive due to the net loss the Company experienced during these periods.

NOTE 4-BALANCE SHEET COMPONENTS

	January 2, 2022	January 3, 2021
	(in thousands)	
Inventories:		
Raw material	$ —	$ 191
Work-in-process	1,397	1,842
Finished goods	681	655
	$ 2,078	$ 2,688
Other current assets:		
Prepaid expenses	$ 921	$ 884
Other	260	182
	$ 1,181	$ 1,066
Property and equipment:		
Equipment	$ 10,341	$ 10,471
Software	1,878	1,783
Furniture and fixtures	32	33
Leasehold improvements	466	466
	12,717	12,753
Accumulated depreciation and amortization	(12,218)	(12,205)
	$ 499	$ 548
Capitalized internal-use software:		
Capitalized software held for internal use	$ 1,699	$ 1,166
Accumulated amortization	(458)	(180)
	$ 1,241	$ 986
Accrued liabilities:		
Employee compensation related accruals	953	762
Other	712	578
	$ 1,665	$ 1,340

The Company recorded depreciation and amortization expense of$626,000 , $817,000, and $1.2 million for the fiscal years 2021, 2020 and 2019, respectively. No interest was capitalized for any period presented. Fiscal year,2021 and 2020 depreciation and amortization of $626,000 and $817,000 respectively, includes approximately $458,000 and $148,000, respectively, of amortization of capitalized internal-use software.

NOTE 5-BUSINESS ACQUISITION

SensiML Acquisition

On January 3, 2019, the Company entered into a stock purchase agreement, or the Stock Purchase Agreement, with SensiML for the purchase of all of its issued and outstanding common stock in exchange for the Company's common stock, or the SensiML Acquisition.

SensiML has a software toolkit enabling IoT developers to quickly and easily create smart devices, transforming rich sensors into actionable event detectors.

SensiML's Analytics Toolkit is an end-to-end software suite that provides OEMs a straightforward process for developing pattern matching sensor algorithms using machine learning technology that are optimized for ultra-low power consumption. The SensiML Analytics Toolkit enables OEMs to quickly and easily leverage the power of local AI in edge, endpoint and wearable designs without the need for significant Data Science or Firmware Engineering resources.

The results of operations for the Company for the fiscal year endedJanuary 2, 2022 include operating activity for SensiML since its acquisition date of January 3, 2019. For the fiscal years ended January 2, 2022 and January 3, 2021, and December 29, 2019 revenues attributable to SensiML included in the condensed consolidated statement of operations were $184,000, $175,000 and $126,000, respectively.

For the years ended January 2, 2022, January 3, 2021, and December 29, 2019 charges of $107,000, $148,000, and $148,000respectively were attributable to the amortization of purchased intangible assets, were included in the statements of operations for the respective periods. Costs related to the acquisition were $104,000 in fiscal 2019

Purchase Price Allocation

Under the purchase accounting method, the total purchase price was allocated to SensiML's net tangible and intangible assets based upon their estimated fair values as of the acquisition date. The excess purchase price over the value of the net tangible and identified intangible assets was recorded as goodwill. During the measurement period, which can be no more than one year from the date of acquisition, the Company obtained information to determine the final fair value of the net assets acquired at the acquisition date. Assets acquired and liabilities assumed are recorded based on valuations derived from estimated fair value assessments and assumptions used by the Company. The Company recorded goodwill related to the acquisition of $185,000 in fiscal 2019.

Intangible assets associated with the acquisition is primarily attributable to the future technology, market presence and knowledgeable and experienced workforce. The fair value assigned to identifiable intangible assets acquired was determined using the income approach taking into account the Company's consideration of a number of inputs, including an independent third-party analysis that was based upon estimates and assumptions provided by the Company. These estimates and assumptions were determined through established and generally accepted valuation techniques. The estimated fair value of the tangible and intangible assets acquired was allocated at SensiML's acquisition date. Goodwill is not amortized for financial accounting purposes and isnot expected to be deductible for income tax purposes.

The Stock Purchase Agreement contains customary representations and warranties between the Company and SensiML, who agreed to indemnify each other for certain breaches of representations, warranties, covenants and other specified matters. Approximately $200,000 in value of the Company's common stock of the purchase price was placed in escrow as security for post-closing working capital adjustments, which expired on January 2, 2020.

NOTE 6-INTANGIBLE ASSETS

The following table provides the details of the carrying value of intangible assets recorded from the2019 acquisition of SensiML at January 2, 2022 (in thousands):

	January 2, 2022			
	Remaining Useful Life	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Developed technology	7	$ 959	$ (287)	$ 672
Customer relationships	—	81	(81)	—
Trade names and trademarks	7	116	(35)	81
Total acquired identifiable intangible assets		$ 1,156	$ (403)	$ 753

The following table provides the details of the carrying value of intangible assets recorded from the2019 acquisition of SensiML at January 3, 2021 (in thousands):

	January 3, 2021			
	Remaining Useful Life	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Developed technology	8	$ 959	$ (192)	$ 767
Customer relationships	1	81	(81)	—
Trade names and trademarks	8	116	(23)	93
Total acquired identifiable intangible assets		$ 1,156	$ (296)	$ 860

The following table provides the details of future annual amortization of intangible assets, based upon the current useful lives at January 2, 2022 (in thousands):

	Amount
Annual Fiscal Years	
2022	107
2023	107
2024	107
2025	107
2026	107
Thereafter	218
Total	$ 753

NOTE 7-DEBT OBLIGATIONS

Revolving Line of Credit

On September 28, 2018, the Company entered into a Loan and Security Agreement (the "Loan Agreement"), with Heritage Bank. The Loan Agreement provided for, among other things, the Revolving Facility with aggregate commitments of $9.0 million.

On December 21, 2018, the Company entered into an Amended and Restated Loan and Security Agreement (the "Amended and Restated Loan Agreement") with Heritage Bank to replace in its entirety the Loan Agreement. The Amended and Restated Loan Agreement increased the Revolving Facility from $9.0 million to $15.0 million (the "Revolving Facility"). The Amended and Restated Loan Agreement requires the Company to maintain at least $3.0 million in unrestricted cash at Heritage Bank. The Company was in compliance with all loan covenants under the Amended and Restated Loan Agreement as of the end of the current reporting period.

On November 6, 2019 the Company entered into a First Amendment to the Amended and Restated Loan Agreement to extend the maturity date of the Revolving Facility for one year through September 28, 2021. Under this amendment, the Revolving Facility advances shall bear interest, on the outstanding daily balance thereof, at a rate per annum equal to the greater of (i) one half of one percentage point (0.50%) above the prime rate, or (ii) five and one half of one percentage points (5.5%).

On December 11, 2020, the Company entered into a Second Amendment (the “Second Amendment”) to their Amended and Restated Loan Agreement with Heritage Bank of Commerce. The Second Amendment amends the Amended and Restated Loan Agreement to, among other things, i) extend the loan maturity date for one year through September 28, 2022 and ii) loan advances will bear interest, on the outstanding daily balances thereof, at a rate per annum equal to one half of one percentage point (0.50%) above the prime rate.

On August 16, 2021, the Company entered into a Third Amendment to the Amended and Restated Loan Agreement with Heritage Bank (the "Third Amendment"). The Third Amendment (a) waived the Company’s non-compliance with the minimum cash covenant which obligated the Company to maintain at least $3.0 million of unrestricted cash at all times and (b) amended this obligation such that the Company shall now be required to maintain unrestricted cash in its accounts at the Bank in an amount of at least $3.0 million measured i) immediately prior to the funding of any credit extension, and ii) at all times that any advance is outstanding.

On November 16, 2021, the Company entered into a Fourth Amendment (the “Fourth Amendment”) to the Amended and Restated Loan Agreement with Heritage Bank originally entered into on December 21, 2018 (the "Amended and Restated Loan Agreement"). The Fourth Amendment extended the loan maturity date through December 31, 2023 and amended and restated an annual, non-refundable Facility Fees of Forty-Five Thousand Dollars ($45,000) due, prorated, on December 31, 2021 and in full on each anniversary of the Closing Date for so long as the Revolving Facility is in place.

On both January 2, 2022 and January 3, 2021, the Company had $15.0million of outstanding balance for the revolving line of credit with interest rates of 3.75% and 3.75%. We were in compliance with all loan covenants under the Amended and Restated Loan Agreement, as amended as of the end of the current reporting period. See Note 1.

Heritage Bank has a first priority security interest in substantially all of the Company’s tangible and intangible assets to secure any outstanding amounts under the Amended and Restated Loan Agreement.

Payroll Protection Program Loan

On May 6, 2020, the Company entered into a loan agreement with Heritage Bank (“PPP Loan”) for a loan of $1.2 million pursuant to the PPP under the CARES Act, as implemented by the U.S. Small Business Administration.

The PPP Loan was evidenced by a promissory note (“Note”) dated May 6, 2020, and matured two years from the disbursement date. The Note bore interest at a rate of 1.00% per annum, with the first six months of interest deferred. Principal and interest were payable monthly commencing six months after the disbursement date and may be prepaid by the Company at any time prior to maturity with no prepayment penalties. The Note contained customary events of default relating to, among other things, payment defaults or breaches of the terms of the Note. Upon the occurrence of an event of default, the lender may require immediate repayment of all amounts outstanding under the Note. The Company applied for loan forgiveness in the fourth quarter of fiscal 2020, in accordance with the terms under the CARES Act. On January 26, 2021, the Company received a notice from Heritage Bank that amounts under the PPP Loan had been forgiven. The Company recorded the loan forgiveness under Gain on forgiveness of PPP Loan on its consolidated statement of operations for the year ended January 2, 2022.

NOTE 8-LEASES

The Company entered into operating leases for office space for its headquarters, domestic and foreign subsidiaries and sales offices These operating leases generally have lease terms of 1 year to 5 years. Finance leases are primarily for engineering design software, and are generally 2 years to 3 years. For the year ended January 2, 2022 the Company's had balances of right-of-use assets and lease liabilities, on its consolidated lance sheet, of approximately $1.5 million and $1.6 million, respectively, related to the operating leases signed for the premises of its headquarters in San Jose and its subsidiary SensiML in Oregon, and finance leases for engineering design software. During the year ended January 3, 2021 the Company recognized right-of-use assets and lease liabilities of approximately $1.8 million and $1.9 million, respectively, relating to the operating leases signed for the premises of its headquarters in San Jose, and its subsidiary SensiML in Oregon, and finance leases for engineering design software.

In October 2018, the Company leased a facility for research and development in San Diego, California, the lease of which expired in July 2020. The Company did not renew the lease agreement in San Diego and the office was closed.

On February 13, 2019, the Company entered into an agreement to lease approximately 24,164 square feet of premises located at 2220 Lundy Avenue, San Jose, CA 95131 for a period of five years, effective April 15, 2019 to relocate its headquarters.

In April 2019, the Company leased a facility for its SensiML subsidiary in Beaverton, Oregon, the lease of which expired inMarch 2021. The Company subsequently entered into a new lease agreement for a 705 square foot facility in Beaverton Oregon with a lease term duration from April 2021 until March 2023.

The Company leased a 9,400 square foot facility in Bangalore, India for the purpose of software development, which was leased throughJune 2021.Subsequently, the Company deemed the 9,400 square foot location to be abandoned and the Company recognized the rent expense of that facility in restructuring charges in December 2020. The remaining lease liability of approximately $196,000 related to the prior India office lease is classified within other accrued liabilities at January 2, 2022 and at January 3, 2021 on the Company's Consolidated Balance Sheets due to ongoing settlement negotiations in relation to the exit. On July 10, 2020, the Company's Indian subsidiary leased a smaller office premises of 1,100 square feet for a period of11 months to accommodate the reduced headcount resulting from our restructuring in 2020. The lease for the 1,100 square foot office was subsequently renewed to end in May 2022.

In addition, the Company rents sales offices in Europe and Asia under short-term leases. Total rent expense during2021, 2020 and 2019 was approximately $425,000, $493,000 and $798,000 respectively.

The following table provides the activity related to operating and finance leases (in thousands):

	Fiscal Year Ended January 2, 2022	Fiscal Year Ended January 3, 2021
Operating lease costs:		
Fixed	$ 402	$ 473
Variable	—	—
Short term	23	20
Total	$ 425	$ 493
Finance lease costs:		
Amortization of ROU asset	$ 700	$ 315
Interest	69	38
Total	$ 769	$ 353

The following table provides the details of supplemental cash flow information (in thousands):

	Fiscal Year Ended January 2, 2022	Fiscal Year Ended January 3, 2021
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows used for operating leases	$ 402	$ 497
Operating cash flows used for finance leases	69	38
Financing cash flows used for financing leases	378	270
Total	$ 849	$ 805
Right-of-use assets obtained in exchange for obligations:		
Operating leases	$ —	$ —
Finance leases	1,311	914
Total	$ 1,311	$ 914

The following table provides the details of right-of-use assets and lease liabilities (in thousands):

	January 2, 2022	January 3, 2021
Right-of-use assets:		
Operating leases	$ 809	$ 1,134
Finance leases	720	705
Total	$ 1,529	$ 1,839
Lease liabilities:		
Operating leases	$ 873	$ 1,212
Finance leases	690	670
Total	$ 1,563	$ 1,882

The following table provides the details of future lease payments for operating and finance leases as ofJanuary 2, 2022 and (in thousands):

Annual Fiscal Years	Operating	Finance
2022	$ 409	$ 475
2023	421	141
2024	106	106
2025	—	—
Total lease payments	936	722
Less: Interest	63	32
Present value of lease liabilities	$ 873	$ 690

The following table provides the details of lease terms and discount rates:

	January 2, 2022
Right-of-use assets:	
Weighted-average remaining lease term (years)	
Operating leases	2.25
Finance leases	2.15
Weighted-average discount rates:	
Operating leases	6.00%
Finance leases	4.57%

NOTE 9-FAIR VALUE MEASUREMENTS

Pursuant to the accounting guidance for fair value measurements and its subsequent updates, fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, the Company considers the principal or most advantageous market and it considers assumptions that market participants would use when pricing the asset or liability.

The accounting guidance for fair value measurement also specifies a hierarchy of valuation techniques based upon whether the inputs to those valuation techniques reflect assumptions other market participants would use based upon market data obtained from independent sources (observable inputs) or reflect the Company's own assumption of market participant valuation (unobservable inputs). The fair value hierarchy consists of the following three levels:

- *Level 1* – Inputs are quoted prices in active markets for identical assets or liabilities.

- *Level 2* – Inputs are quoted prices for similar assets or liabilities in an active market, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable and market-corroborated inputs which are derived principally from or corroborated by observable market data.

- *Level 3* – Inputs are derived from valuation techniques in whichone or more significant inputs or value drivers are unobservable.

Our cash and cash equivalents balances of $19.6million and $22.0 million, including amounts in money market funds, as ofJanuary 2, 2022 and January 3, 2021, respectively. The carrying value of cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate their fair values due to their relatively short maturities

Investment in Privately-held Non-Affiliate

In the third quarter of 2021, in connection with a revenue contract with a non-affiliated customer, the Company received shares of the customer's common stock. The full transaction price under the revenue contract was cash plus a non-cash consideration consisting of a certain amount of the customers equity. The Company considers the non-cash consideration to be an investment in the customer. The full transaction price is the amount of consideration which the Company expects to receive in the contract in exchange for transferring the promised goods and services to the customer.

Since the non-cash consideration are shares of common stock that arenot publicly traded, their fair value is not readily determinable. The Company considered various valuation methods such as market multiples, guideline public company method, and the Black-Scholes Option Pricing model. Due to limited data for the valuation, the Company ultimately selected the Black Scholes method using back-solve techniques as that was determined to be the most suitable with the available data. The Black Scholes Option Pricing model is a valuation approach that can be used to determine the value of common shares for companies in which there are no, or infrequent, transactions involving common shares.

The Company believes that its valuation method for the non-public equity under this arrangement falls under Level 3 in the fair value hierarchy because the value method relies on unobservable market inputs. The fair value of the non-cash consideration is listed below:

		Fair Value Measurements at Reporting Date Using		
Assets:	Total	Quoted Prices in Active Markets for Identical Assets (Level I)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investment in privately-held non-affiliate	$ 300,000	$ —	$ —	$ 300,000
Total assets	$ 300,000	$ —	$ —	$ —

In arriving at the estimated value for the non-cash consideration, the Company utilized inputs relying on significant judgment in accordance with the AICPA Accounting and Valuation Guide, Valuation of Privately Held Company Equity Securities Issued as Compensation (2013). The key assumptions utilized are below:

Discount for lack of marketability: 34% - 41%
Expected Term: 4 - 5 Years
Risk Free Interest Rate: 0.75% - 0.92%
Dividend: 0.00
Volatility: 63% - 78%

Volatility was estimated by utilizing a selected peer group of companies within the customers' industry with a valuation date as of October 2021.

After initial recognition fair value of the non-cash consideration, the Company elected to utilize the practical expedient under ASC 321 by which entities can elect to measure equity securities without readily determinable fair values at "cost minus impairment," basis for periods subsequent to the acquisition date. Under the "cost minus impairment" methods, when the investment is determined to be impaired on the basis of a qualitative assessment, or there is an observable price change in an orderly transaction, entities that have made the election in ASC 321 must remeasure such equity securities at fair value in accordance with ASC 820. ASC 321 indicates that the adjustments to the carrying value of an equity security without a readily determinable fair value should reflect the fair value of the security as of the date that the observable transaction for the similar security took place. Subsequent to the valuation date and to January 2, 2021, there were no observable indicators of impairment for the investment in the privately-held, non-affiliate. The investment was not revalued and the Company did not recognize any impairments in fiscal 2021 related to the investment.

NOTE 10-INCOME TAXES

The following table presents the U.S. and foreign components of consolidated loss before income taxes and the provision for (benefit from) income taxes (in thousands):

	Fiscal Years		
	2021	2020	2019
Loss before income taxes:			
U.S.	$ (6,461)	$ (11,170)	$ (15,813)
Foreign	(36)	70	289
Loss before income taxes	$ (6,497)	$ (11,100)	$ (15,524)
Provision for (benefit from) income taxes:			
Current:			
Federal	$ —	$ —	$ —
State	3	3	3
Foreign	22	39	108
Subtotal	25	42	111
Deferred:			
Federal	—	—	(141)
State	—	—	(44)
Foreign	94	9	(6)
Subtotal	94	9	(191)
Provision for (benefit from) income taxes	$ 119	$ 51	$ (80)

The following table presents the rate reconciliation between income tax provisions at the U.S. federal statutory rate and the effective rate reflected in the consolidated statements of operations (in thousands):

	Fiscal Years		
	2021	2020	2019
Income tax (benefit) at statutory rate	$ (1,364)	$ (2,331)	$ (3,260)
State taxes	3	3	(42)
Foreign taxes	124	34	41
Stock compensation and other permanent differences	(155)	171	245
PPP Loan Forgiveness	(250)	—	—
R&D Tax Credits	(230)	(261)	(286)
Expired tax attributes	3,304	208	1,085
Future benefit of deferred tax assets not recognized	(1,312)	2,227	2,277
Other	—	—	(140)
Provision for (benefit from) income taxes	$ 119	$ 51	$ (80)

Based on the available objective evidence, management believes it is more likely than not that the U.S. net deferred tax assets will not be fully realizable. Accordingly, the Company has provided a full valuation allowance against its U.S. federal and state deferred tax assets at January 2, 2022. Any future release of the valuation allowance may be recorded as a tax benefit increasing net income. The Company believes it is more likely than not it will be able to realize its foreign deferred tax assets. Deferred tax balances are comprised of the following (in thousands):

	January 2, 2022	January 3, 2021
Deferred tax assets:		
Net operating losses	$ 45,197	$ 43,703
Accruals and reserves	1,347	1,239
Credits carryforward	5,660	5,860
Depreciation and amortization	7,820	9,240
Stock-based compensation	403	485
Operating lease liability	409	469
Gross deferred tax assets	60,836	60,996
Deferred tax liabilities:		
Right-of-use asset	(400)	(458)
Withholding tax on future distribution	(125)	—
Gross deferred tax assets	(525)	(458)
Net deferred tax assets	60,311	60,538
Valuation allowance	(60,353)	(60,486)
Total deferred tax liability (assets)	$ (42)	$ 52

As of January 2, 2022, the Company had net operating loss carryforwards of approximately $183.9million for federal and $94.4 million for state income tax purposes. If not utilized, the federal net operating loss for years beginning beforeJanuary 1, 2018 of $128.6 million will expire beginning in fiscal year 2022 through 2037, and federal net operating losses beginning after January 1, 2018 of $55.3 million will be carried forward indefinitely (subject to certain limitations). Ifnot utilized, the state net operating losses will expire beginning in fiscal year 2028 through 2041.

The Company has research credit carryforwards of approximately $3.7 million for federal and $4.7 million for state income tax purposes as of January 2, 2022. If not utilized, the federal carryforwards will expire in various amounts beginning in fiscal year2023. The California credit can be carried forward indefinitely.

Events which may restrict utilization of a company's net operating loss and credit carryforwards include, but are not limited to, certain ownership change limitations as defined in Internal Revenue Code Section 382 and similar state provisions. In the event the Company has had a change of ownership, utilization of carryforwards could be restricted to an annual limitation. The annual limitation may result in the expiration of net operating loss carryforwards and credit carryforwards before utilization.

The Company has not undertaken a study to determine if its net operating losses are limited. In the event the Company previously experienced an ownership change, or should experience an ownership change in the future, the amount of net operating losses and research and development credit carryovers available in any taxable year could be limited and may expire unutilized.

Foreign withholding taxes associated with the repatriation of earnings of foreign subsidiaries werenot provided for on the undistributed earnings of certain foreign subsidiaries as of the end of fiscal 2021. The Company intends to reinvest these earnings indefinitely in the Company's foreign subsidiaries. The Company believes that future domestic cash generation will be sufficient to meet future domestic cash needs. The Company has not recorded a deferred tax liability on the undistributed earnings of non-U.S. subsidiaries. The foreign withholding taxes would not have a material impact on the Company's financial position and results of operation.

Uncertain Tax Positions

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

	January 2, 2022	January 3, 2021	December 29, 2019
Beginning balance of unrecognized tax benefits	$ 2,176	$ 2,117	$ 2,161
Additions (subtractions) for tax positions related to the prior year	(7)	38	(46)
Additions for tax positions related to the current year	128	114	88
Lapse of statutes of limitations	(178)	(93)	(86)
Ending balance of unrecognized tax benefits	$ 2,118	$ 2,176	$ 2,117

Out of $2.1 million of unrecognized tax benefits, there are no unrecognized tax benefits that would result in a change in the Company's effective tax rate if recognized in future years. The accrued interest and penalties related to uncertain tax positions was not significant for January 2, 2022, January 3, 2021 and December 29, 2019.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security (CARES) Act was signed into law. The CARES Act includes provisions relating to loan programs for small businesses ("Paycheck Protection Program" or "PPP"), refundable payroll tax credits, net operating loss carryback periods, alternative minimum tax credit refunds, modifications to the net interest deduction limitations and technical corrections to the tax depreciation methods for qualified improvement property. The Company applied for and received a PPP loan in Q2 of fiscal year ended 2020 in the amount of $1.2 million which was utilized on qualified business expenses under the guidance of PPP. The Company applied for loan forgiveness and the application was approved by the lender on January 26, 2021.

The Company is not currently under tax examination in the U.S. and the Company's historical net operating loss and credit carryforwardsmay be adjusted by the Internal Revenue Service, and other tax authorities until the statute closes on the year in which such tax attributes are utilized. The Company estimates that its unrecognized tax benefits will not change significantly within the next twelve months.

The Company is subject to U.S. federal income tax as well as income taxes in many U.S. states and foreign jurisdictions in which the Company operates. The U.S. tax years from 1998 forward remain effectively open to examination due to the carryover of unused net operating losses and tax credits.

NOTE 11-STOCKHOLDERS' EQUITY

Common and Preferred Stock

As of January 2, 2022, the Company is authorized to issue 200 million shares of common stock and has 10 million shares of authorized but unissued undesignated preferred stock. Without any further vote or action by the Company's stockholders, the Board of Directors has the authority to determine the powers, preferences, rights, qualifications, limitations or restrictions granted to or imposed upon any wholly unissued shares of undesignated preferred stock.

Issuance of Common Stock

On September 22, 2021, the Company entered into a Share Subscription Agreement for the sale of 125,000 shares of our common stock (the "Private Placement"). On September 30, 2021, the Company entered into a Common Stock Purchase Agreement for the sale of 73,664 shares of our common stock, in a registered direct offering pursuant to our effective shelf registration statement on Form S-3 (File No. 333-230352) (the "Registered Direct Offering," and together with the Private Placement, the "Share Placements"). The net proceeds to the Company from the Share Placements in aggregate, after deducting equity issuance costs of approximately $45,000, was approximately $1.0 million.

On June 22, 2020, the Company closed an underwritten public offering of 2.5 million shares of common stock, $0.001 par value per share at a price of $3.50 per share. The Company received gross proceeds from the offering of approximately $8.8 million and incurred stock issuance costs of approximately $1.1 million. Under the terms of the underwriting agreement, the Company granted the underwriter a 30-day option to purchase up to an additional 375,000 shares of common stock to cover overallotments. On July 21, 2020 the underwriter's partially exercised the option to purchase 141,733 additional shares of common stock in connection with the offering, resulting in additional gross proceeds to the Company of approximately $496,000 and incurred additional stock issuance costs of approximately $52,000. Total gross proceeds received from this offering was approximately $9.3 million and incurred total stock issuance costs of approximately $1.2 million. Net proceeds received from this offering after deducting stock issuance costs was approximately $8.1 million.

On June 21, 2019, the Company closed an underwritten public offering of 1.3 million shares of common stock, $0.001 par value per share at a price of $ $7.0 per share, which included 171,429 shares issued pursuant to the underwriters' full exercise of their over-allotment option. The Company received net proceeds from the offering of approximately $8.0 million, net of underwriter's commission and other offering expenses paid as of the third quarter of 2019.

On March 15, 2019, the Company filed a shelf registration statement on Form S-3, under which the Company may, from time to time, sell securities in one or more offerings up to a total amount of $75.0 million. The Company's shelf registration statement was declared effective on March 29, 2019.

At January 2, 2022 and January 3, 2021 and January warrants exercisable for 386,100 shares of common stock at an exercise price of $19.32 per share remain outstanding. The warrants are exercisable any time for a period of 60 months from the May 29, 2018 issuance date.

NOTE 12-EMPLOYEE STOCK PLANS

2009 Stock Plan

On April 24, 2019, 2009 Plan, the Company's share-based compensation plane for its employees, was replaced by the 2019 Stock Plan ("2019 Plan") with an extended term of ten years through March 15, 2028. The remaining balance of available shares under the 2009 Plan of 299,070 were cancelled as of April 24, 2019.

2019 Stock Plan

On April 24, 2019, the Company's Board of Directors and shareholders approved the 2019 Stock Plan ("2019 Plan") to replace the 2009 stock Plan ("2009 Plan"). Under the 2019 Plan, 357,143 shares of common stock are available for grants, plus any shares subject to any outstanding options or other awards granted under the Company's 2009 Plan that expire, are forfeited, cancelled, returned to the Company for failure to satisfy vesting requirements, settled for cash or otherwise terminated without payment being made thereunder. As of January 2, 2022, approximately 593,481 shares of the Company's common stock were reserved for issuance under the 2019 Plan.

Options typically vest at a rate of25% one year after the vesting commencement date, and one forty-eighth for each month of service thereafter. RSUs typically vest at a rate of 25% one year after the vesting commencement date, and one eighth every six months thereafter. The Company may implement different vesting schedules in the future with respect to any new equity awards.

Employee Stock Purchase Plan

The 2009 Employee Stock Purchase Plan ("2009 ESPP") was adopted in March 2009. The 2009 ESPP was amended by the Board of Directors in January 2015 and in February 2017, and was approved by the Company's stockholders on April 23, 2015 and April 26, 2017, to reserve an additional 71,429 and 107,143 shares of common stock, respectively, for issuance under the 2009 ESPP.

On May 6, 2019, the Board of Directors approved the extension of the term of the 2009 ESPP to March 5, 2029. Additionally, the shares available under the 2009 ESPP were increased from 342,857 to 642,857 shares of common stock. This extension and increase in shares under the ESPP plan were subsequently ratified by the Company's stockholders.

As of January 2, 2022, 258,321 shares were reserved for issuance under the 2009 ESPP. The 2009 ESPP provides for six month offering periods. Participants purchase shares through payroll deductions of up to 20% of an employee's total compensation (maximum of 1,429 shares per offering period). The 2009 ESPP permits the Board of Directors to determine, prior to each offering period, whether participants purchase shares at: (i) 85% of the fair market value of the common stock at the end of the offering period; or (ii) 85% of the lower of the fair market value of the common stock at the beginning or the end of an offering period. The Board of Directors has determined that, until further notice, future offering periods will be made at 85% of the lower of the fair market value of the common stock at the beginningor the end of an offering period.

NOTE 13-STOCK-BASED COMPENSATION

The Company provides stock-based incentive compensation, or awards, to eligible employees and non-employee directors. Awards that may be granted under the program include non-qualified and incentive stock options, restricted stock units, or RSUs, performance-based restricted stock units ("PRSU") and stock bonus units. To date, awards granted under the program consist of stock options, RSUs and PRSUs. The majority of stock-based awards granted under the program vest over four years. Stock options granted under the program have a maximum contractual term of ten years.

Stock-based compensation expense is recognized in the Company's consolidated statements of operations and includes compensation expense for the stock-based compensation awards granted or modified subsequent to January 1, 2006, based on the grant date fair value estimated in accordance with the provisions of the amended authoritative guidance. The impact on the Company's results of operations of recording stock-based compensation expense for fiscal years 2021, 2020, and 2019 was as follows (in thousands):

	Fiscal Years		
	2021	2020	2019
Cost of revenue	$ 282	$ 162	$ 78
Research and development	843	670	2,242
Selling, general and administrative	1,401	907	824
Total costs and expenses	$ 2,526	$ 1,739	$ 3,144

No stock-based compensation was capitalized or included in inventories at the end of 2021, 2020 and 2019.

Stock-Based Compensation Award Activity

The following table summarizes the shares available for grant under the 2019 Plan (in thousands):

	Shares Available for Grant
Balance at December 29, 2019	272
Authorized	550
Options granted	—
Options forfeited or expired	65
RSUs granted	(816)
RSUs forfeited	249
Balance at January 3, 2021	320
Authorized	600
Options granted	—
Options forfeited or expired	31
RSUs granted	(619)
RSUs forfeited	262
Balance at January 2, 2022	594

No stock options were granted during the fiscal years 2021, 2020, and 2019.

Stock Options

The following table summarizes stock options outstanding and stock option activity under the2019 Plan for 2021, 2020 and 2019:

	Number of Shares (in thousands)	Weighted Average Exercise Price	Weighted Average Remaining Term (in years)	Aggregate Intrinsic Value (in thousands)
Balance outstanding at December 30, 2018	229	$ 30.52	3.70	
Granted	—	—		
Forfeited or expired	(42)	24.14		
Exercised	(1)	10.92		
Balance outstanding at December 29, 2019	186	32.09	3.32	
Granted	—	—		
Forfeited or expired	(65)	38.83		
Exercised	—	—		
Balance outstanding at January 3, 2021	121	28.46	3.75	
Granted	—	—		
Forfeited or expired	(28)	31.68		
Exercised	—	—		
Balance outstanding at January 2, 2022	93	$ 27.49	3.19	$ —
Exercisable and Vested and expected to vest at January 2, 2022	93	$ 27.49	3.19	$ —

There was no intrinsic value for the stock options, based on the Company's closing stock price of $5.11 per share at January 2, 2022, the last trading day of the Company's current reporting period, which would have been received by the option holders had all option holders exercised their options as of that date.

The total intrinsic value of options exercised during 2021, 2020 and 2019 was not significant. Total cash received from employees as a result of employee stock option exercises during 2021, 2020 and 2019 was approximately $0, $0, and $3,600, respectively. The Company settles employee stock option exercises with newly issued common shares. In connection with these exercises, there was no tax benefit realized by the Company due to the Company's current net loss position.

Total stock-based compensation expense recognized related to stock options was $0, $39,000, and $60,000 for fiscal years 2021, 2020, and 2019, respectively. No stock options were granted during each of the fiscal years 2021, 2020 and 2019. As of the end of 2021, there are no unvested stock options.

Significant exercise price ranges of options outstanding, related weighted average exercise prices and contractual life information at the end of 2021 were as follows:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Options Outstanding (in thousands)	Weighted Average Remaining Contractual Life (in years)	Weighted Average Exercise Price	Options Vested and Exercisable (in thousands)	Weighted Average Exercise Price
$12.05	48	4.68	$ 12.05	48	$ 12.05
$30.38	3	0.60	30.38	3	30.38
$31.50	5	0.85	31.5	5	31.50
$32.20	3	1.35	32.2	3	32.20
$40.18	0.4	0.81	40.18	0.4	40.18
$44.80	6	2.96	44.80	6	44.80
$46.62	3	2.35	46.62	3	46.62
$47.46	13	1.94	47.46	13	47.46
$48.72	8	0.35	48.72	8	48.72
$53.48	4	2.38	53.48	4	53.48
$12.05- $53.48	93	3.19	$ 27.49	93	$ 27.49

Valuation Assumptions

The Company uses the Black-Scholes option pricing model to estimate the fair value rights to purchase shares under the Company's 2009 ESPP. Using the Black-Scholes pricing model requires the Company to develop highly subjective assumptions including the expected term of awards, expected volatility of its stock, expected risk-free interest rate and expected dividend rate over the term of the award. The Company's expected term of awards assumption is based primarily on its historical experience with similar grants. The Company's expected stock price volatility assumption for ESPP shares is based on the historical volatility of the Company's stock, using the daily average of the opening and closing prices and measured using historical data appropriate for the expected term. The risk-free interest rate assumption approximates the risk-free interest rate of a Treasury Constant Maturity bond with a maturity approximately equal to the expected term of the ESPP shares. This fair value is expensed over the requisite service period of the award. The fair value of RSUs and PRSUs is based on the closing price of the Company's common stock on the date of grant. Equity compensation awards which vest with service are expensed using the straight-line attribution method over the requisite service period.

In addition to the assumptions used in the Black-Scholes pricing model, the amended authoritative guidance requires that the Company recognize expense for awards ultimately expected to vest; therefore, the Company is required to develop an estimate of the number of awards expected to be forfeited prior to vesting, or forfeiture rate. The forfeiture rate is estimated based on historical pre-vest cancellation experience and is applied to all share-based awards.

Restricted Stock Units

The Company grants restricted stock units ("RSU") to employees with various vesting terms. RSUs entitle the holder to receive, at no cost, one common share for each restricted stock unit on the vesting date as it vests. The Company withholds shares in settlement of employee tax withholding obligations upon the vesting of restricted stock units. Stock-based compensation related to grants of vested RSUs and PSUs was $2.4million, $1.7, million and $3.0 million in 2021, 2020 and 2019, respectively.

The following table summarizes RSU's activity under the 2019 Plan and the related weighted average grant date fair value, for2021, 2020 and 2019:

	RSUs & PRSUs Outstanding	
	Number of Shares (in thousands)	Weighted Average Grant Date Fair Value
Nonvested at December 30, 2018	183	$ 17.22
Granted	353	10.77
Vested	(118)	14.48
Forfeited	(41)	—
Nonvested at December 29, 2019	377	$ 12.55
Granted	816	3.97
Vested	(144)	10.41
Forfeited	(249)	7.93
Nonvested at January 3, 2021	800	$ 4.99
Granted	619	5.81
Vested	(586)	4.99
Forfeited	(265)	5.00
Nonvested at January 2, 2022	568	$ 5.86

Employee Stock Purchase Plan

The weighted average estimated fair value, as defined by the amended authoritative guidance, of rights issued pursuant to the Company's ESPP during2021, 2020 and 2019 was $2.18, $1.09 and $4.28, respectively. Sales under the ESPP were 83,605 shares of common stock at an average price per share of $3.14 for 2021, 20,409 shares of common stock at an average price per share of $2.47 for 2020, and 24,131 shares of common stock at an average price per share of $9.76 for 2019.

As of January 2, 2022, 258,343 shares under the 2009 ESPP remained available for issuance. The Company recorded compensation expenses related to the ESPP of $110,000, $39,000 and $60,000 in 2021, 2020 and 2019, respectively.

The fair value of rights issued pursuant to the Company's ESPP was estimated on the commencement date of each offering period using the following weighted average assumptions:

	Fiscal Years		
	2021	2020	2019
Expected life (months)	6.0	6.0	6.0
Risk-free interest rate	0.05%	0.12%	2.37%
Volatility	74%	82%	54%
Dividend yield	—	—	—

The methodologies for determining the above values were as follows:

- Expected term: The expected term represents the length of the purchase period contained in the ESPP.
- Risk-free interest rate: The risk-free interest rate assumption is based upon the risk-free rate of a Treasury Constant Maturity bond with a maturity appropriate for the term of the purchase period.
- Volatility: The Company determines expected volatility based on historical volatility of the Company's common stock for the term of the purchase period.
- Dividend Yield: The expected dividend assumption is based on the Company's intentnot to issue a dividend under its dividend policy.

NOTE 14-INFORMATION CONCERNING PRODUCT LINES, GEOGRAPHIC INFORMATION, ACCOUNTS RECEIVABLE AND REVENUE CONCENTRATION

The Company identifies its business segments based on business activities, management responsibility and geographic location. For all periods presented, the Company operated in a single reportable business segment.

The following is a breakdown of revenue by product family (in thousands):

	Fiscal Years		
	2021	2020	2019
Revenue by product line (1) :			
New products	$ 7,761	$ 2,782	$ 3,123
Mature products	4,924	5,852	7,187
Total revenue	$ 12,685	$ 8,634	$ 10,310

(1) New products include all products manufactured on 180 nanometer or smaller semiconductor processes, eFPGA IP license, professional services, QuickAI and SensiML AI software as a service (SaaS) revenues. Mature products include all products produced on semiconductor processes larger than 180 nanometers. New product revenues of $7.8 million includes revenues from in eFPGA IP license of $1.1 million and professional engineering services of $1.5 million for fiscal 2021. For fiscal years 2020 and 2019 the Company recognized $0.3 million and $0, respectively, in revenues for professional engineering services. Related to the Company's professional services revenue, the Company had Contract assets of approximately $250 thousand included in accounts receivable on its Consolidated Balance Sheet at January 2, 2022 and none at January 3, 2021. Additionally, at January 2, 2022, the Company had contract liabilities, related to its professional services, of $300 thousand included in deferred revenue on its Consolidated Balance Sheet andnone at January 3, 2021.

The following is a breakdown of revenue by shipment destination (in thousands):

	Fiscal Years		
	2021	2020	2019
Revenue by geography:			
Asia Pacific (1)	$ 3,352	$ 2,100	$ 3,049
Europe	2,448	1,501	2,459
North America (2)	6,885	5,033	4,802
Total revenue	$ 12,685	$ 8,634	$ 10,310

(1 Asia Pacific includes revenue from China $1.1 million or 11% and Japan of $1.8 million or 17% of total revenue in 2019 and $1.8 million or 15% and $1.6 million or 12% of total revenue in 2018, respectively. In 2017, revenue from China and Japan were $1.3 million or 11% and $1.5 million or 12%, respectively.

(2 North America includes revenue from the United States of $4.7 million or 46% of total revenue in 2019, $6.4 million or 50% of total revenue in 2018 and $4.2 million or 34% of total revenue in 2017.

The following distributors and customers accounted for 10% or more of the Company's revenue for the periods presented:

	Fiscal Years		
	2021	2020	2019
Distributor "A"	15%	24%	40%
Distributor "C"	11%	15%	13%
Distributor "E"	22%	19%	*
Customer "B"	8%	10%	13%
Customer "E"	10%	*	10%
Customer "N"	16%	*	*
Customer "O"	14%	*	*
Customer "M"	—%	16%	*

* Represents less than 10% of revenue as of the date presented.

Note: the amounts related to Distributor in the above table represent sales-in only to those distributors, and Customer information relates to sales out information. As such, sales to a Distributor, may also include information of a related Customer.

The following distributors and customers accounted for 10% or more of the Company's accounts receivable as of the dates presented:

	January 2, 2022	January 3, 2021
Distributor "A"	42%	*
Distributor "C"	17%	*
Distributor "E"	22%	*
Customer "O"	10%	*
Customer "P"	—%	67%
Customer "Q"	—%	10%

* Represents less than 10% of accounts receivable as of the date presented.

As of January 2, 2022 and January 3, 2021, approximately 3% and 4%, respectively, of the Company's long-lived assets, including property and equipment and other assets were located outside the United States.

NOTE 15-COMMITMENTS AND CONTINGENCIES

Commitments

Certain wafer manufacturers require the Company to forecast wafer starts several months in advance. The Company is committed to take delivery of and pay for a portion of forecasted wafer volume. As of the end of 2021 and 2020, the Company had $972,000 and $60,000 respectively, of outstanding commitments for the purchase of wafer inventory.

The Company has purchase obligations with certain suppliers for the purchase of goods and services entered into in the ordinary course of business. As of January 2, 2022, total outstanding purchase obligations were $939,000 all of which is due within next twelve months.

Litigation

From time to time, the Company may become involved in legal actions arising in the ordinary course of business including, but not limited to, intellectual property infringement and collection matters. Absolute assurance cannot be given that any such third-party assertions will be resolved without costly litigation; in a manner that is not adverse to the Company's financial position, results of operations or cash flows; or without requiring royalty or other payments which may adversely impact gross profit.

NOTE 16-SUBSEQUENT EVENTS

Appointment of New CFO and SVP, Finance

On February 1, 2022, QuickLogic Corporation (the "Company") appointed Elias Nader, 57, as its Chief Financial Officer and Senior Vice President ("SVP") of Finance, effective February 1, 2022. In this role, Mr. Nader will lead the global finance organization and assume the duties of the Company's principal financial officer and principal accounting officer. At that time, Mr. Anthony Contos, the Company's then interim Chief Accounting Officer, ceased serving in this role and no longer serves as the Company's principal financial officer and principal accounting officer effective February 4, 2022.

There are no family relationships between Mr. Nader and any executive officer or director of the Company, there are no understandings or arrangements between Mr. Nader and any other person pursuant to which Mr. Nader was appointed as Chief Financial Officer and SVP of Finance and Mr. Nader has no transactions reportable under Item 404(a) of Regulation S-K.

Share Subscription Agreement

On February 9, 2022, the Company entered into Common Stock Purchase Agreements with certain investors for the sale of an aggregate of 310,000 shares of common stock, par value $0.001 (the "Common Stock"), in a registered direct offering. These share placements resulted in gross cash proceeds of approximately $1.5 million (the "Financing"). The purchase price for each share of Common Stock in this placement was $4.78. The Company currently intends to use the net proceeds from the Financing for working capital, the development of next generation eFPGA-based products, including AI and open-source hardware or software, and general corporate purposes. The Company may also use a portion of the net proceeds to acquire and/or license technologies and acquire and/or invest in businesses when the opportunity arises; however, we currently have no commitments or agreements and are not involved in any negotiations with respect to any such transactions.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure that information required to be disclosed in the reports we file or submit pursuant to the Securities and Exchange Act of 1934, as amended, or the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Principal, as appropriate, to allow timely decisions regarding required disclosure.

Management, with the participation of the Chief Executive Officer and Financial Officer, has performed an evaluation of our disclosure controls and procedures as required by the applicable rules of the Exchange Act. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of January 2, 2022 our disclosure controls and procedures were effective.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. Internal control over financial reporting is the process designed by, or under the supervision of, our Chief Executive Officer and Chief Financial Officer, and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles, and includes those policies and procedures that: (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and dispositions of assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; 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 the financial statements.

Because of its inherent limitations, cost-effective internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with established policies or procedures may deteriorate.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an assessment of the effectiveness of our internal control over financial reporting as of the end of the period covered by this Annual Report on Form 10-K. In making this assessment, we used the criteria based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission in "Internal Control - Integrated Framework (2013)." Based on the results of this assessment, management (including our Chief Executive Officer and Chief Financial Officer) has concluded that, as of January 2, 2022 our internal control over financial reporting was effective.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

The information required by Part III is incorporated by reference from the definitive Proxy Statement regarding our 2022 Annual Meeting of Stockholders, which Proxy Statement is anticipated to be filed with the Security and Exchange Commission within 120 days after the end of the fiscal year covered by this Report.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information regarding the background of our officers is contained herein under Item 1, "Executive Officers and Directors."

Information regarding the background of our directors hereby incorporated by reference from our definitive Proxy Statement relating to the 2022 Annual Meeting of Stockholders, which Proxy Statement is anticipated to be filed within 120 days after the end of the fiscal year covered by this Report.

There are no family relationships between any of our directors, executive officers, or persons nominated or chosen to be a director or officer, and no such persons have been involved during the last ten years, in any legal proceedings material to their abilities or integrity.

We have adopted a Code of Conduct and Ethics, including provisions enumerated in Item 406 of Regulation S-K. A copy is posted on our website at https://ir.quicklogic.com/governance-docs. Any changes to or waiver from this *Code of Conduct and Ethics* will be posted to this page on our website.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is hereby incorporated by reference from our definitive Proxy Statement relating to the 2022 Annual Meeting of Stockholders, which Proxy Statement is anticipated to be filed within 120 days after the end of the fiscal year covered by this Report.

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

The information required by this item is hereby incorporated by reference from our definitive Proxy Statement relating to the 2022 Annual Meeting of Stockholders, which Proxy Statement is anticipated to be filed within 120 days after the end of the fiscal year covered by this Report.

ITEM 13. CERTAIN RELATIONSHIPS, RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this item is hereby incorporated by reference from our definitive Proxy Statement relating to the 2022 Annual Meeting of Stockholders, which Proxy Statement is anticipated to be filed within 120 days after the end of the fiscal year covered by this Report.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is hereby incorporated by reference from our definitive Proxy Statement relating to the 2022 Annual Meeting of Stockholders, which Proxy Statement is anticipated to be filed within 120 days after the end of the fiscal year covered by this Report.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) 1. *Financial Statements*

Reference is made to Item 8 for a list of all financial statements and schedules filed as a part of this Report.

2. *Financial Statement Schedules*

QuickLogic Corporation Valuation and Qualifying Accounts

Allowance for Deferred Tax Assets (in thousands):	Balance at Beginning of Period	Charged to Costs and Expenses	Deductions/ Write-offs	Balance at End of Period
Fiscal Year 2021	$ 60,538	$ (227)	$ —	$ 60,311
Fiscal Year 2020	$ 58,140	$ 2,398	$ —	$ 60,538
Fiscal Year 2019	$ 54,913	$ 3,227	$ —	$ 58,140

All other schedules not listed above have been omitted because the information required to be set forth therein isnot applicable or is shown in the financial statements or notes hereto.

3. *Exhibits*

The exhibits listed under Item 15(b) hereof are filed as part of this Annual Report on Form 10-K.

(b) *Exhibits*

The following exhibits are filed with or incorporated by reference into this Report:

Exhibit Number	Description	Form	Exhibit	Filing Date
3.1	Fourth Amended and Restated Certificate of Incorporation of QuickLogic Corporation.	8-K	3.1	4/28/2017
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of QuickLogic Corporation.	8-K	3.1	12/24/2019
3.3	Amended and Restated Bylaws of QuickLogic Corporation.	8-K	3.2	05/02/2005
3.4	Certificate of Elimination of the Series A Junior Participating Preferred Stock.	8-K	3.1	11/26/2013
4.1	Specimen Common Stock certificate of QuickLogic Corporation.	S-1/A	4.1	10/12/1999
4.2	Form of Common Stock Warrant.	8-K	4.1	05/29/2018
4.3**	Description of Securities.			
10.1	Form of Indemnification Agreement for directors and executive officers.	10-Q	10.24	11/13/2002
10.2**	Standard Industrial Commercial Multi-Tenant Lease between Lundy Associates, LLC, as Lessor, and QuickLogic Corporation, dated February 13, 2019.			

10.3	Patent Cross License Agreement dated August 25, 1998, between QuickLogic Corporation and Actel Corporation.	S-1/A	10.18	08/10/1999
10.4	Form of Change of Control Severance Agreement.	10-K	10.13	03/11/2008
10.5	Form of Change of Control Severance Agreement for Chief Executive Officer.	10-K	10.14	03/11/2008
10.6	2005 Executive Bonus Plan, as restated.	8-K	10.1	04/28/2008
10.7	QuickLogic Corporation 2019 Stock Plan.	10-Q	10.1	05/09/2019
10.8***	QuickLogic Corporation 2009 ESPP Plan, as amended	8-K	10.1	04/22/2020
10.9*	QuickLogic Corporation 2019 Stock Plan, as amended May 12, 2021.	8-K	10.21	05/17/2021
10.10*	QuickLogic Corporation 2009 Employee Stock Purchase Plan.	10-Q	10.2	05/11/2017
10.11*	Form of Notice of Grant and Stock Option Agreement under the 2009 Stock Plan.	8-K	10-26	08/04/2009
10.12*	Form of Notice of Grant of Stock Purchase Rights and Restricted Stock Purchase Agreement under the 2009 Stock Plan.	8-K	10-27	08/04/2009
10.13*,**	Form of Notice of Grant of Restricted Stock Unit and Restricted Stock Unit Agreement under the 2009 Stock Plan.	8-K	10-28	08/04/2009
10.14*.**	Form of Notice of Grant and Stock Option Agreement under the 2019 Stock Plan.			
10.15*,**	Form of Notice of Grant of Restricted Stock Unit and Restricted Stock Unit Agreement under 2019 Stock Plan.			
10.16*,**	Form of Notice of Grant of Stock Rights and Restricted Stock Purchase Agreement Under the 2019 Stock Plan.			
10.17	Amended and Restated Loan and Security Agreement between Heritage Bank of Commerce and QuickLogic Corporation, dated as of December 21, 2018.	8-K	10.1	12/28/2018
10.18	First Amendment to Amended and Restated Loan and Security Agreement between Heritage Bank of Commerce and QuickLogic Corporation, dated as of November 6, 2019.	10-Q	10.1	11/08/2019
10.19	Second Amendment to Amended and Restated Loan and Security Agreement between Heritage Bank of Commerce and QuickLogic Corporation, dated as of December 11, 2020.	8-K	10.1	12/11/2020
10.20	Promissory Note between QuickLogic Corporation and Heritage Bank dated May 6, 2020.	8-K	10.1	05/06/2020
10.21	Third Amendment to Amended and Restated Loan and Security Agreement, dated as of August 16, 2021.	10-Q	10.1	08/18/2021

10.23	Form of Common Stock Purchase Agreement, dated September 30, 2021, between QuickLogic Corporation and the investor named therein	8-K	10.1	09/30/2021
10.24	Form of Share Agreement, dated September 22, 2021, between QuickLogic Corporation and the purchases named therein	8-K	10.2	09/30/2021
10.25	Form of Common Stock Purchase Agreement, dated February 9, 2022	8-K	10.1	02/09/2022
21**	Subsidiaries of QuickLogic Corporation.			
23.1**	Consent of Moss Adams LLP, Independent Registered Public Accounting Firm.			
24.1**	Power of Attorney (included on the Signature page of this Annual Report on Form 10-K).			
31.1**	CEO Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			
31.2**	CFO Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			
32***	CEO and CFO Certifications pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			
101.INS	Inline XBRL Instance Document			
101.SCH	Inline XBRL Taxonomy Extension Schema Document			
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document			
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document			
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document			
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document			
104	The cover page from the Company's annual report on Form 10-K for the year ended January 2, 2022 has been formatted in Inline XBRL and contained in Exhibit 101.			

* Indicates management contract or compensatory plan or arrangement.
** Filed herewith.
*** Furnished herewith.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on this March 22, 2022.

QUICKLOGIC CORPORATION

By: /s/ Brian C. Faith
Brian C. Faith
President and Chief Executive Officer

QUICKLOGIC CORPORATION

By: /s/ Elias Nader
Elias Nader
Chief Financial Officer and SVP, Finance

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Brian C. Faith and Elias Nader and each of them singly, as true and lawful attorneys-in-fact and agents with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities to sign this Annual Report on Form 10-K filed herewith and any or all amendments to said report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission granting unto said attorneys-in-fact and agents the full power and authority to do and perform each and every act and the thing requisite and necessary to be done in and about the foregoing, as to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or his substitute, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ Brian C. Faith Brian C. Faith	President and Chief Executive Officer; Director *(Principal Executive Officer)*	March 22, 2022

/s/ Elias Nader Elias Nader	Chief Financial Officer and SVP, Finance *(Principal Financial Officer)*	March 22, 2022
/s/ Rajiv Jain Rajiv Jain	Vice President, Worldwide Operations	March 22, 2022
/s/ Timothy Saxe Timothy Saxe	Senior Vice President Engineering and Chief Technology Officer	March 22, 2022
/s/ Michael R. Farese Michael R. Farese	Chairman of the Board	March 22, 2022
/s/ Joyce Kim Joyce Kim	Director	March 22, 2022
/s/ Radhika Krishnan Radhika Krishnan	Director	March 22, 2022
/s/ Andrew J. Pease Andrew J. Pease	Director	March 22, 2022
/s/ Arturo Krueger Arturo Krueger	Director	March 22, 2022
/s/ Daniel A. Rabinovitsj Daniel A. Rabinovitsj	Director	March 22, 2022
/s/ Christine Russell Christine Russell	Director	March 22, 2022
/s/ Gary H. Tauss Gary H. Tauss	Director	March 22, 2022

Table of Contents

QuickLogic Corporation

Trademark Status Report (by mark)

January 2, 2022

Trademark	TM Image	Country	Class	App. Date Reg. Date	App. No. Reg. No.	Status
ARCTICLINK		Canada	9	7/4/2007 7/9/2008	1354534 TMA718201	Registered
AUSTRALIS		United States	9	9/14/2021	97027599	Pending
PASIC		United States	9	2/20/1990 6/23/1992	74030976 1696813	Registered
POLARPRO		Canada		3/14/2006 1/21/2009	1293706 TMA732873	Registered
POLARPRO		EUTM	9, 38, 41	3/6/2006 1/31/2007	004941159 004941159	Registered
POLARPRO		Hong Kong	9	3/6/2006 7/7/2006	300593073 300593073	Registered
POLARPRO		Israel	9	3/6/2006 8/7/2007	188207 188207	Registered
POLARPRO		Malaysia	9	3/9/2006 6/9/2010	06003574 06003574	Registered
POLARPRO		Singapore	9	3/16/2006 3/16/2006	T0604912Z T0604912Z	Registered
POLARPRO		South Korea	9	3/7/2006 9/1/2006	4020060011642 400676749	Registered
POLARPRO		Taiwan	9	3/20/2006 11/16/2006	095013441 1236319	Registered
POLARPRO		United Kingdom	9, 38, 41	3/6/2006 1/31/2007	UK00904941159 UK00904941159	Registered
POLARPRO (and design)	PolarPro	Canada	9	12/4/2006 10/10/2007	1326831 TMA698122	Registered

Trademark	TM Image	Country	Class	App. Date Reg. Date	App. No. Reg. No.	Status
POLARPRO (and design)		China	9	12/1/2006 12/1/2006	A0006570 IR 907167	Registered
POLARPRO (and design)		EUTM	9	12/1/2006 12/1/2006	A0006570 IR 907167	Registered
POLARPRO (and design)		Japan	9	12/1/2006 12/1/2006	A0006570 IR 907167	Registered
POLARPRO (and design)		United Kingdom	9	12/1/2006 12/1/2006	UK00800907167 UK00800907167	Registered
POLARPRO (and design)		WIPO	9	12/1/2006 12/1/2006	A0006570 IR 907167	Registered
QUICKLOGIC		Australia	9	3/8/2005 8/6/2007	1045371 1045371	Registered
QUICKLOGIC		Australia	9	10/28/2014 4/10/2015	1654924 1654924	Registered
QUICKLOGIC		Canada		3/7/2005 4/4/2008	1249691 TMA711062	Registered
QUICKLOGIC		Canada	9	1/6/2015 9/8/2016	1709541 TMA948769	Registered
QUICKLOGIC		China	9	2/5/2015 5/14/2016	16314201 16314201	Registered
QUICKLOGIC		China	9	3/9/2005 12/14/2007	4531068 4531068	Registered
QUICKLOGIC		EUTM	9, 16, 42	3/8/2005 4/20/2006	004326931 004326931	Registered
QUICKLOGIC		EUTM	9, 38, 42	11/11/2014 3/6/2015	013447826 013447826	Registered

Trademark	TM Image	Country	Class	App. Date Reg. Date	App. No. Reg. No.	Status
QUICKLOGIC		Hong Kong	9	3/7/2005 6/26/2006	300381276 300381276	Registered
QUICKLOGIC		Hong Kong	9	11/25/2014 8/13/2015	303213413 303213413	Registered
QUICKLOGIC		India	9	3/7/2005 10/27/2008	1342958 1342958	Registered
QUICKLOGIC		India	9	1/27/2015 10/25/2017	2890588 2890588	Registered
QUICKLOGIC		Israel	9	11/26/2014 3/2/2017	270026 270026	Registered
QUICKLOGIC		Israel	9	3/7/2005 3/7/2005	179090 179090	Registered
QUICKLOGIC		Japan	9	3/7/2004 6/24/2005	2005019257 4875059	Registered
QUICKLOGIC		Japan	9	12/1/2014 10/2/2015	2014100965 5797249	Registered
QUICKLOGIC		Malaysia	9	3/9/2005 2/18/2008	05003476 05003476	Registered
QUICKLOGIC		Singapore	9	3/8/2005 10/10/2005	T0503155C T0503155C	Registered
QUICKLOGIC		Singapore	9	1/7/2015 1/7/2015	40201500377Q 40201500377Q	Registered
QUICKLOGIC		South Korea	9	3/8/2005 12/9/2005	4020050009713 400642609	Registered
QUICKLOGIC		South Korea	9	1/28/2015 11/11/2015	4020150006538 401142362	Registered
QUICKLOGIC		Taiwan	9	1/26/2015 10/1/2015	104004596 01730543	Registered
QUICKLOGIC		Taiwan	9	3/8/2005 1/16/2006	094010095 1191870	Registered

Trademark	TM Image	Country	Class	App. Date Reg. Date	App. No. Reg. No.	Status
QUICKLOGIC		United Kingdom	9, 16, 42	3/8/2005 4/20/2006	UK00904326931 UK00904326931	Registered
QUICKLOGIC		United Kingdom	9, 38, 42	11/11/2014 3/6/2015	UK00913447826 UK00913447826	Registered
QUICKLOGIC		United States	9	9/4/2014 11/3/2015	86385987 4843994	Registered
QUICKLOGIC		United States	9	9/9/2004 11/8/2005	78481189 3013357	Registered
QUICKLOGIC (and design) (new)		Australia	9	10/28/2014 4/10/2015	1654929 1654929	Registered
QUICKLOGIC (and design) (new)		Canada	9	1/6/2015 9/8/2016	1709542 TMA948771	Registered
QUICKLOGIC (and design) (new)		China	9	2/5/2015 5/14/2016	16314202 16314202	Registered
QUICKLOGIC (and design) (new)		EUTM	9, 38, 42	11/11/2014 3/6/2015	013447842 013447842	Registered
QUICKLOGIC (and design) (new)		Hong Kong	9	11/25/2014 8/13/2015	303213422 303213422	Registered
QUICKLOGIC (and design) (new)		India	9	1/27/2015 1/27/2017	2890589 2890589	Registered
QUICKLOGIC (and design) (new)		Israel	9	11/26/2014 11/2/2016	270027 270027	Registered
QUICKLOGIC (and design) (new)		Japan	9	12/1/2014 10/2/2015	2014100966 5797250	Registered

Table of Contents

Trademark	TM Image	Country	Class	App. Date Reg. Date	App. No. Reg. No.	Status
QUICKLOGIC (and design) (new)	QuickLogic	Singapore	9	1/7/2015 1/7/2015	40201500379T 40201500379T	Registered
QUICKLOGIC (and design) (new)	QuickLogic	South Korea	9	1/28/2015 11/11/2015	4020150006534 401142361	Registered
QUICKLOGIC (and design) (new)	QuickLogic	Taiwan	9	1/26/2015 3/16/2016	104004598 01758796	Registered
QUICKLOGIC (and design) (new)	QuickLogic	United Kingdom	9, 38, 42	11/11/2014 3/6/2015	UK00913447842 UK00913447842	Registered
QUICKLOGIC (and design) (new)	QuickLogic	United States	9	9/4/2014 11/3/2015	86385990 4843995	Registered
VIALINK		United States	9	2/20/1990 6/30/1992	74030945 1698304	Registered

Record Count
59

EXHIBIT 21

Subsidiaries of QuickLogic Corporation

Name	Jurisdiction
QuickLogic International, Inc.	Delaware
QuickLogic Kabushiki Kaisha	Japan
QuickLogic (India) Private Limited	India
QuickLogic (Shanghai) Trading Limited	China
SensiML Corporation	Delaware

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-230352) and Form S-8 (Nos. 333-34898, 333-34900, 333-34902, 333-76022, 333-123515, 333-159498, 333-208060, 333-231806, 333-237879, and 333-256300) of QuickLogic Corporation (the “Company”), of our report dated March 22, 2022, relating to the consolidated financial statements and schedule of the Company, appearing in this Annual Report on Form 10-K for the year ended January 2, 2022.

/s/ Moss Adams LLP

San Francisco, California
March 22, 2022

EXHIBIT 31.1

I, Brian C. Faith, certify that:

1. I have reviewed this annual report on Form 10-K of QuickLogic Corporation;

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

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

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

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

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

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

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

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

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

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

Date: March 22, 2022

/s/ Brian C. Faith
Brian C. Faith
President and Chief Executive Officer

EXHIBIT 31.2

I, Elias Nader, certify that:

1. I have reviewed this annual report on Form 10-K of QuickLogic Corporation;

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

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

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

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

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

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

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

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

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

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

Date: March 22, 2022

/s/ Elias Nader
Elias Nader
Chief Financial Officer and SVP, Finance

EXHIBIT 32

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

I, Brian C. Faith, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of QuickLogic Corporation on Form 10-K for the fiscal year ended January 2, 2022 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of QuickLogic Corporation.

By:	/s/ Brian C. Faith
Date:	March 22, 2022
Name:	Brian C. Faith
Title:	*President and Chief Executive Officer*

I, Elias Nader, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of QuickLogic Corporation on Form 10-K for the fiscal year ended January 2, 2022, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of QuickLogic Corporation.

By:	/s/ Elias Nader
Date:	March 22, 2022
Name:	Elias Nader
Title:	*Chief Financial Officer and SVP, Finance*