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

FORM 10-K

(Mark One)

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

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2023

☐ ^{or}
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number: 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)

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

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

<u>Title of Each Class</u>	<u>Trading Symbol</u>	<u>Name of Exchange on which Registered</u>
Common Stock, par value \$0.001 per share	QUIK	The Nasdaq Capital Market

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

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

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

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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 ☐
Non-accelerated filer ☒

Accelerated filer ☐
Smaller reporting company ☒
Emerging growth company ☐

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

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

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

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act)

Yes ☐ No ☒

The aggregate market value of voting stock held by non-affiliates of the registrant as of July 2, 2023, the registrant's most recently completed second fiscal quarter, was \$ 114,393,756 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 22, 2024, the registrant had 14,377,289 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 to be filed subsequently for the registrant's Annual Meeting of Stockholders (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

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FORWARD-LOOKING STATEMENT AND RISK FACTOR 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; (xvi) pandemics, epidemics, or other widespread public health problems, such as the COVID-19 pandemic, which could impact the global economy, and (xvii) global hostilities, including the invasion of Ukraine by Russia and resulting regional instability, and the continued hostilities and armed conflict in the Middle East, which could adversely impact the global supply chain, disrupt our operations, or negatively impact the demand for our products in our primary end markets. 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.

Risk Factor Summary

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

Risks Related to Our Business

- We have incurred losses in the past years. 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.*
- Our future operating results are likely to fluctuate and therefore may fail to meet expectations, which could materially adversely affect our business, results of operations and financial condition.*
- Cyberattacks, like our 2023 cybersecurity incident can lead to disruption of business, reduced revenue, increased costs, liability claims, or harm to our reputation or competitive position.*
- We may be unable to adequately protect our intellectual property rights and may face significant expenses as a result of future litigation.*

Risk Related to Our Common Stock

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

Risks Related to Our Industry and Global and Economic Conditions

- The semiconductor industry is highly competitive, and has experienced significant consolidation, and if we are unable to compete effectively or identify attractive opportunities for consolidation, it could materially adversely affect our business and results of operations.*
- The semiconductor business is subject to downward price pressure.*

Risks Related to Our Products

- If we fail to successfully develop, introduce and sell new products 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.*
- If markets for our new products do not develop, or if our products do not meet customer 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 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.*

PART I**ITEM 1. BUSINESS****General**

QuickLogic Corporation was founded in 1988 and reincorporated in Delaware in 1999. We provide innovative, programmable silicon and software platforms to enable our customers to develop custom hardware products in a fast time-to-market and cost-effective way. Specifically, we are a fabless semiconductor company with a variety of products: 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 Application Specific Integrated Circuit (ASIC) products, our SoCs to run our customers' 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 Aerospace, and Defense, Consumer/Industrial IoT, and Consumer Electronics markets.

Our new products include the following: eFPGA IP Licensing business, associated professional services, consisting of development and integration of eFPGA technology into custom semiconductor solutions, our silicon products consisting of EOS™, QuickAI™, ArcticLink® III, PolarPro®3, PolarPro II, PolarPro, and Eclipse II products. In addition to delivering our own semiconductor solutions, our new products category includes our AI/ML Software Platform from our wholly-owned subsidiary company, SensiML, which 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 products revenue category. Our mature products include primarily FPGA families named PASIC®3 and QuickRAM®, as well as programming hardware and design software.

For our IP and silicon platforms, we collaborate with multiple partners on co-marketing and/or co-selling initiatives. These partners could have primary business lines in semiconductor IP, Design Services, semiconductor foundry, semiconductor assembly and test, and others.

For our AI/ML Software, SensiML collaborates with several microcontroller and sensor 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 Technologies, On Semiconductor Corp., Microchip Technology Inc., Silicon Laboratories, Inc., STMicroelectronics N.V., Arduino, NXP Semiconductors N.V., Raspberry Pi, and Nordic Semiconductor.

Our eFPGA IP is currently developed on 12nm, 16nm, 22nm, 28nm, 40nm, 65nm, 90nm, 130nm, and 250nm process nodes with a roadmap to more advanced nodes. The licensable IP is generated by our automated compiler tool called Australis™, which 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 a SoC company.

We have changed our manufacturing strategies to reduce the cost of our silicon solution platforms to enable their use in a range of unique products ranging from low to high volume. Our EOS S3, EOS S3AI, QuickAI and ArcticLink III silicon platforms combine mixed signal physical functions and hard-wired logic alongside our field programmable logic. Our EOS S3, EOS S3AI, and ArcticLink III solution platforms are manufactured on process nodes where we can benefit from smaller die sizes and lower power consumption. 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 customers' 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 costs, 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.

In order to grow our revenue from its current level, we depend upon increased revenue from our new products, including existing new product platforms and platforms currently in development. We expect our business growth to be driven mainly by eFPGA IP and our silicon solutions, with additional contributions from 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, sale, and marketing of our new solution platforms, IP, and software.

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 Capital Market 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 the 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 2023, 2022, and 2021 refer to the Fiscal Years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

Industry Background

Historically, system 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. The heterogeneity can be implemented as multiple discrete devices on a Printed Circuit Board (PCB), multiple IP cores in a monolithic device, or as multiple devices (e.g., chiplets) integrated into an advanced package.

An important underlying trend for the Aerospace and Defense, and Industrial markets is that there is a need for a high degree of fragmentation of system functionality. This drives a need for a time and cost-efficient product development flow while maintaining the ability to extend the life cycle of a given design through design changes and uniquely optimize designs for new workloads and/or algorithms that need to be deployed (e.g., deploying more advanced AI algorithms in the future). Development time and non-recurring engineering ("NRE") costs tend to be more of the focus for hardware products in these markets rather than the bill of materials cost.

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 hardware products 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 hardware products designed to address a relatively narrow set of applications. These hardware products typically integrate a number of common peripherals or functions, and the functionality of these hardware products is fixed prior to wafer fabrication;
- Programmable Logic Devices ("PLDs") are general-purpose hardware products, 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 hardware products 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 hardware products 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 is well understood. High development risks, development costs, and opportunity costs are incurred when using ASICs to produce custom hardware products with either very low unit production cost or unique functionality that is only achievable with a customer ASIC solution. Suppliers of programmable logic hardware products, 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 hardware products the solution of choice for custom products unless the volume is very high or the functionality and/or operating environment is unique. These cost reduction efforts have significantly increased the volume required to justify the total cost of an ASIC.

Field Programmable Gate Array ("FPGA") technology has been used historically by system companies and OEMs to develop and deploy customer-specific functionality with fast time-to-market and low development costs. End market use includes Aerospace and Defense, Industrial, Computing, Communications, IoT, and Consumer. According to a recent research report published by Grand View Research, the FPGA market is expected to grow at >10% Compound Annual Growth Rate ("CAGR") from 2023 to 2030. Of that, the Aerospace and Defense segment is expected to expand at the fastest CAGR of 12.7% over the same forecast period. The emergence of embedded field programmable gate array IP technology ("eFPGA IP") has particularly favored the aerospace and defense industry by offering even better integration, reliability, and low power options over the use of traditional discrete FPGAs.

The Aerospace and Defense, and Industrial markets are well served by existing core silicon or custom ASIC development. Although much of these market's uses are generally not as price, power, and size sensitive, there are use cases for reducing size, weight and power. When there is a strong need for a custom solution to address specific functionality or operating environment (e.g., high radiation, extended temperature ranges, etc.), designers often turn to discrete FPGAs, or in some cases when standard FPGAs do not exist, an ASIC. 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.

In the past two years, QuickLogic has also entered into multiple, large eFPGA-related contracts with customers in the Aerospace and Defense market and expects to continue to do so in the future. Historically, the Defense market has followed QuickLogic's mature products revenue trend, but recent advancements in QuickLogic's Australis IP generator tool, the recent Strategic Radiation Hardened FPGA contract for the U.S. Department of Defense, participation in the DARPA Toolbox, and other eFPGA-related contracts with the Defense Industrial Base have enabled renewed interest from customers in this area. Consequently, QuickLogic expects these trends to be a primary growth driver.

Markets and Product Technology

We market our programmable logic (FPGAs and eFPGA IP) solutions primarily to Defense Industrial Base contractors, U.S. Government entities, and System OEMs, and fabless semiconductor companies. These customers may value one or more of our product categories. 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 SoC and SensiML solutions to OEMs and ODMs offering differentiated Consumer/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 for our SoC and SensiML products include Consumer/Industrial IoT and Consumer Electronics.

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:

1. Programmable Logic Technology

Our programmable logic enables our customers to customize their hardware platforms. We have two distinct types of programmable logic – Reprogrammable and One-Time Programmable ("OTP"). Within our Reprogrammable logic architecture, we can utilize standard foundry processes (e.g., CMOS-logic process with foundry-provided SRAM memory elements) or more unique processes (e.g., foundry-provided CMOS logic processes and third-party-provided memory elements (e.g., MRAM)). We can choose the appropriate process technology based on our customers' requirements. 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. An example of the unique process combination is when we use foundry-provided CMOS with MRAM in the Strategic Radiation Hardened FPGA program for which we are the prime contractor.

The second type of is our programmable logic is our ViaLink® OTP technology. ViaLink is our proprietary and patented technology and possesses the characteristics of non-volatility and instant-on, very low standby power, low dynamic power, small form factor, power cycles easily and quickly are required.

2. Semiconductor Intellectual Property

We develop semiconductor intellectual property (IP) cores for licensing to our customers or for use within our own devices. Licensable eFPGA IP based on our Field Programmable Gate Array technology is called "embedded FPGA IP". The eFPGA IP is generated by our automated IP compiler tool called Australis™, which enables our engineers to create an eFPGA IP for our licensees that they can then integrate into their SoC without significant involvement by us. We believe this flow enables a scalable development and support model for our company. Additionally, we may develop and provide other IP blocks that our customers can use in conjunction with our eFPGA IP, such as signal processing / digital filter functions, hardware acceleration, processor offloading, and various bus interface functions.

3. FPGA User Tools

We develop, maintain and support software tools that our customers use to program their designs into our FPGA, eFPGA IP and SoC products. By design, all programmable logic technology is unconfigured in its default state after manufacturing. Designers using programmable logic must configure the state of the programmable logic to match their requirements; this is accomplished by a suite of tools commonly referred to as FPGA User Tools. There are two such categories of FPGA User Tools – proprietary and open-source. Historically, FPGA/eFPGA vendors have provided only proprietary versions of these tools to their customers. For our Mature products, we continue to support a 100% proprietary FPGA User Tool. For our new products and eFPGA IP, we support a 100% open-source version, as well as a hybrid FPGA User Tool called Aurora that combines open-source and proprietary technology.

4. Silicon Platforms

We have two types of silicon platforms, discrete FPGAs and SoCs that embed FPGA technology. We have a variety of discrete FPGAs – historically based on our ViaLink technology, more recently based on our Reprogrammable technology (either SRAM- or MRAM-based configuration). We also have multiple silicon platforms that fall under the SoC category - ArcticLink and EOS S3, EOS S3 LV, and EOS S3AI. Our SoC platforms combine mixed signal physical functions, hard-wired logic, and programmable logic on one device. 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 a particular customer or market requirements while lowering the total cost of ownership.

5. Artificial Intelligence / Machine Learning (AI/ML) Software

Through our wholly-owned subsidiary company, SensiML, we develop and optimize an end-to-end software suite that provides developers with 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 Studio (formerly the 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 hardware product sales and eFPGA IP licenses, with any necessary corresponding work delivered via professional engineering services, SensiML Analytics Toolkit subscriptions, and per unit royalties. We specialize in enhancing the user experience in leading edge IoT hardware 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 hardware products.

Our embedded FPGA technology gives ASIC and SoC developers the benefit of flexibility to make design changes post-manufacturing changes at very fast time-to- and time-in-market, while keeping power consumption low. Our multi-core sensor processing products such as ArcticLink 3 S1, ArcticLink 3 S2, EOS 3, EOS S3 LV, and EOS S3AI 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 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.

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, FPGA User Tools, 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 our customers. We intend to continue to define and implement compelling solutions for our target customers and partners.

We believe our solutions are resonating with our target customers who value lower power consumption, platform design flexibility, 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 Japan 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.

Customers typically order our products through our distributor s. Currently, we have eight active distributors in North America and a network of seventeen active distributors and sales representatives throughout Europe and Asia to support our international business. eFPGA IP customers and SensiML SaaS subscribers typically enter into licensing agreements directly with QuickLogic and SensiML, respectively.

We also have an Aerospace and Defense, industrial, and IoT product customer base that purchases our mature silicon products. We expect to continue to offer silicon hardware products to these customers, as well as new eFPGA IP for when these customers choose to implement their own silicon platform solution.

One customer represented approximately 70% of our total revenue for the year ended December 31, 2023. Three customers represented 20%, 16%, and 12% of our total revenue for the year ended January 1, 2023. In addition, a noteworthy portion of our revenue comes from sales to customers located outside of the United States. See Note 14 to the consolidated financial statements for additional information.

Backlog

We do not believe that backlog as of any particular date is indicative of future results. The majority of our quarterly silicon shipments are typically booked during the quarter. Our silicon sales are made primarily pursuant to standard purchase orders issued by OEM customers and distributors. Our eFPGA IP and design service contracts are typically made pursuant to license agreements and development contracts. Development contracts can span several months to several quarters in duration.

Competition

A number of companies offer products that compete with one or more of our semiconductor products and solutions. Competitors of our eFPGA semiconductor IP include small, venture-backed startup companies. Competitors of our low power discrete FPGA devices include suppliers of low-density FPGAs such as Lattice Semiconductor Corp. and Microsemi Corp. (a subsidiary of Microchip Technology Inc.). Competitors for our Aerospace and Defense discrete FPGAs include conventional FPGAs suppliers such as Xilinx Inc. (a subsidiary of Advanced Micro Devices, Inc.), Altera (a subsidiary of Intel Corp.), and Microsemi Corp. Competitors of our SensiML AI/ML Software business include several small, venture-backed startup companies.

Research and Development

We are focused on developing our core programmable logic technology and software tools. Our products combine our silicon platforms with our eFPGA IP, FPGA User Tools, 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 port to new foundry and process technology our eFPGA IP solutions, as well as continue to enhance and support our FPGA User Tools to meet emerging industry standards and satisfy changing customer requirements. Further, our future success will depend on our ability to execute on current, large eFPGA IP and discrete FPGA development contracts, as well as win new ones. We have made and expect to continue to make substantial investments in R&D. Our R&D expenses were \$6.4 million, or 30% of revenue, \$5.0 million, or 31% of revenue, and \$6.9 million, or 55% of revenue for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively. Research and development expenses for the year ended December 31, 2023 reflect increases in employee salary, software maintenance, and financing arrangement expenses and reductions in the allocation of R&D expenses to cost of revenues.

Manufacturing

We have close relationships with third-party manufacturers for our customer commercial products for 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.

In connection with commercial customers, we outsource commercial products wafer manufacturing, primarily to GlobalFoundries and Taiwan Semiconductor Manufacturing Company Limited ("TSMC"). We outsource our commercial product packaging primarily to Amkor Technology, Inc. Integra Specialty Products, JCET Group Co. Ltd., and Golden Altos Corp. GlobalFoundries manufactures our EOS S3, EOS S3 LV, and EOS S3AI Sensor Platform in a 40 nm complementary metal oxide semiconductor ("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 nm CMOS process. TSMC also manufactures our Eclipse products on 0.25 micron CMOS process, and other products using a 65nm CMOS process on twelve-inch wafers. We purchase products from GlobalFoundries and TSMC on a purchase order basis.

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

In connection with U.S. Government end-user customers, we are required to procure wafer fabrication, package assembly, and testing from sources that maintain Defense Microelectronics Activity accreditation from the U.S. Department of Defense and maintain certain intellectual property security standards. We outsource wafer manufacturing, packaging, and testing services to certified U.S.-owned and continental U.S.-based suppliers.

Employees and Human Capital

As of December 31, 2023, we had 49 employees worldwide, of which 45 employees were located in the United States. 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, 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.

As of December 31, 2023, our research and development staff consisted of 20 employees located in California, Oregon, Texas, Utah, and Taiwan. These employees constitute the following groups:

- Our silicon engineering group develops our eFPGA IP and FPGA products.
- Our electronic design and automation 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 hardware products are optimized. Our system software group creates the drivers and other system code required to connect our silicon hardware products to Application Processors, drivers, and microcode to support 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.

We monitor employee turnover rates by region and globally. Approximately 34% of our employees have been employed by us for more than 10 years and approximately 20% have been employed by us for more than 20 years. The average tenure is 9.65 years. Our turnover rate was 14% for the fiscal year ended December 31, 2023. We believe our compensation philosophy, along with the career growth and development opportunities promotes longer employee tenure and reduces voluntary turnover.

Intellectual Property

We believe that it is important to maintain a large patent portfolio to protect our innovations. We currently hold 21 active U.S. patents and have five pending applications for additional U.S. patents. Our patents contain claims covering various aspects of programmable integrated circuits, programmable interconnect structures, and programmable metal hardware products. In Europe and Asia, we hold five patents and have zero pending applications. Our issued patents expire between 2026-2042.

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 five registered trademarks with the U.S. Patent and Trademark Office.

With regard to certain patents, the U.S. Government has an irrevocable, non-exclusive, royalty-free license, pursuant to which the U.S. Government may use or authorize others to use the inventions covered by such patents.

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 26, 2024:

Name	Age	Position
Brian C. Faith	49	President and Chief Executive Officer; Director
Elias Nader	59	Chief Financial Officer and Senior Vice President (SVP) of Finance
Rajiv Jain	63	Vice President, Worldwide Operations
Timothy Saxe	68	Senior Vice President Engineering and Chief Technology Officer
Owen Bateman	57	Vice President, Worldwide Sales
Michael R. Farese	77	Chairman of the Board
Joyce Kim	53	Director
Radhika Krishnan	53	Director
Andrew J. Pease	73	Director
Christine Russell	74	Director
Gary H. Tauss	69	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 in February 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 General and Administrative 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 Corp. 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.

Owen Bateman joined QuickLogic in February 1997. Mr. Bateman has served as our Vice President of Worldwide Sales since April 2022. Prior to this role, Mr. Bateman served as QuickLogic's Senior Director of Sales EMEA and USA from 2013 to 2022, and Strategic Accounts, Direct Sales and Channel Sales from 1997 to 2013. Prior to joining QuickLogic, Mr. Bateman held sales and field application engineering positions at Intel and Abacus Polar. Mr. Bateman has designed FPGAs and completed several successful FPGAs and custom ASIC designs. Mr. Bateman holds a Higher National Certificate in Electronic and Microelectronic Engineering from Brooklands College, England.

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 Corp. a semiconductor manufacturing company, from November 2000 to February 2001. Dr. Saxe joined GateField Corp., 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 Corp. 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 hereby incorporated by reference from our definitive Proxy Statement relating to the 2024 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 Annual 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 SEC, 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.

Risks Related to Our Business

We have incurred losses in the past years. 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 as we continue to develop new products, applications and technologies. Some of our new products and products currently under development have generated 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 new products. 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 during Fiscal 2023 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 our 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.

Our future operating results are likely to fluctuate and therefore may fail to meet expectations, which could materially adversely affect our business, results of operations and financial condition.

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.

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 an 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.

Cyberattacks, like our January 2023 cybersecurity incident that was previously disclosed, can lead to disruption of business, reduced revenue, increased costs, liability claims, or harm to our reputation or competitive position.

As demonstrated by our January 2023 cybersecurity incident that was previously disclosed, 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, data centers, cloud data centers, corporate computers, manufacturing systems, and/or access to accounts we have at our suppliers, vendors, and customers. Due to the actions of outside parties, employee error, malfeasance, or otherwise, an unauthorized party 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.

As previously disclosed, we detected a ransomware infection on January 20, 2023 affecting a limited number of IT systems, including systems that contained personal information of our employees. While we took steps to resolve this issue and believe the incident has not had nor will have a material impact on our business, operations, ability to serve our customers, or financial results, similar cybersecurity incidents could occur in the future.

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. Further, the California Privacy Rights Act ("CPRA"), which was voted into law by California residents in 2020 and amends the CCPA, imposes additional data protection obligations on covered companies doing business in California and creates a new California data protection agency specifically tasked to enforce the law, which will likely result in increased regulatory scrutiny of California businesses in the areas of data protection and security. The substantive requirements for businesses subject to the CPRA went into effect on January 1, 2023 and became enforceable on July 1, 2023. Privacy and security laws, self-regulatory schemes, regulations, standards, and other obligations are constantly evolving, and may conflict with each other, and any such laws, schemes, regulations and standards 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 company's, 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.

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.

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.

There may be some 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 failures. 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. 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.

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

Many of our products are manufactured outside of the United States at manufacturing facilities operated by our suppliers in Asia and South Asia. 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. We continue 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 the ongoing conflict in the Middle East, the Russia-Ukraine military conflict, rising tensions with Taiwan, potential disruption caused by pandemics, the United Kingdom's recent exit from the European Union, and 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.

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

We continue to seek acquisitions of 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 our 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.

Adverse developments affecting financial institutions, companies in the financial services industry or the financial services industry generally, such as actual events or concerns involving liquidity, defaults or non-performance, could adversely affect our operations and liquidity.

Actual events involving limited liquidity, defaults, non-performance or other adverse developments that affect financial institutions or other companies in the financial services industry or the financial services industry generally, or concerns or rumors about any events of these kinds, have in the past and may in the future lead to market-wide liquidity problems. For example, on March 10, 2023, Silicon Valley Bank, or SVB, was closed by the California Department of Financial Protection and Innovation, which appointed the Federal Deposit Insurance Corporation ("FDIC") as receiver. On March 12, 2023, Signature Bank and Silvergate Capital Corp. were closed and placed under receivership. We did not have any direct depository or other financial relationships with the aforementioned closed banks. Although a statement by the U.S. Department of the Treasury, the Federal Reserve, and the FDIC stated that all depositors of these financial institutions would have access to all of their money after only one business day following the date of closure, including funds held in uninsured deposit accounts, borrowers under credit agreements, letters of credit and certain other financial instruments with financial institutions placed into receivership by the FDIC may be unable to access undrawn amounts thereunder. If any of our counterparties to any such instruments that we may enter into in the future were to be placed into receivership, we may be unable to access such funds. In addition, if any parties with whom we conduct business are unable to access funds pursuant to such instruments or lending arrangements with such a financial institution, such parties' ability to pay their obligations to us or to enter into new commercial arrangements requiring additional payments to us could be adversely affected. In this regard, counterparties to these financial institutions' credit agreements and arrangements, and third parties such as beneficiaries of letters of credit, among other, may experience direct impacts from the closure of these financial institutions and uncertainty remains over liquidity concerns in the broader financial services industry.

Our access to our cash and cash equivalents in amounts adequate to finance our operations could be significantly impaired by the financial institutions with which we have arrangements directly facing liquidity constraints or failures. In addition, investor concerns regarding the U.S. or international financial systems could result in less favorable commercial financing terms, including higher interest rates or costs and tighter financial and operating covenants, or systemic limitations on access to credit and liquidity sources, thereby, making it more difficult for us to acquire financing on acceptable terms or at all. Any material declines in available funding or our ability to access our cash, cash equivalents, and liquidity resources could adversely impact our ability to meet our operating expenses, financial and contractual obligations, or result in breaches of our contractual obligations or result in violations of federal or state wage and hour laws. Any of these impacts could have material adverse impacts on our operations and liquidity.

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 event near our headquarters, our customers' facilities, our distributors' facilities or our suppliers' facilities, our business could be seriously harmed.

In addition, any catastrophic event, 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.

Pandemics or other widespread public health problems could adversely affect our business, results of operations, and financial condition in a material way.

Pandemics, epidemics, or other widespread public health problems, such as the COVID-19 pandemic, could negatively impact our business. Outbreaks have, and could again, result in significant government measures to control the spread of disease, including, among others, restrictions on travel, manufacturing, and the movement of employees. If, for example, pandemics were to occur in ways that significantly disrupt the manufacture, shipment, and purchasing of our products or the products of our customers, this may materially negatively impact our operating results and our overall business. Disruptions to manufacturing and shipping could also constrain our supplies, leading to operational delays, disruptions and inflationary pressures.

The ultimate impact of a pandemic and its potential effects on our business depends on many factors that are not within our control. This could lead to further disruptions or restrictions on our ability to source, manufacture or distribute our products, including temporary disruptions to the facilities of our contract manufacturers in China, Taiwan, the Philippines and Singapore, or the facilities of our 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 a pandemic. Delays in production or delivery of components or raw materials that are part of our global supply chain due to restrictions imposed to limit the spread of a pandemic could delay or inhibit our ability to obtain the supply of components and finished goods. If the impact of a pandemic becomes more severe in the locations where we, our customers or suppliers conduct business, or we experience more pronounced disruptions in our operations, we may experience constrained supply or curtailed demand that may materially adversely impact our business, cash flows, and results of operations.

Changes to existing accounting pronouncements or taxation rules or practices may cause adverse income 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 Capital Market, or the way we conduct our business and subject us to regulatory inquiries or litigation.

We may have increased 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.

Risks Related to Our Common Stock

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 products 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.

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 is listed on the Nasdaq Capital Market ("Nasdaq"). 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.

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 their securities. In the future, we may be the subject of similar litigation. Securities litigation could result in substantial costs and divert management's attention.

Our certificate of incorporation, our 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.

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 Industry and Global and Economic Conditions

The semiconductor industry is highly competitive, and has experienced significant consolidation, and if we are unable to compete effectively or identify attractive opportunities for consolidation, it could materially adversely affect our business and results of operations.

Our ability to compete successfully in the highly competitive semiconductor industry depends on elements both within and outside of our control. We face significant competition within each of our product lines from major global semiconductor companies as well as smaller companies focused on specific market niches. In addition, companies not currently in direct competition with us may introduce competing products in the future.

If we are unable to compete effectively, our competitive position could be weakened relative to our peers, which would have a material adverse effect on our business and results of operations. Our future success depends on many factors, including the development of new technologies and effective commercialization and customer acceptance of our products, and our ability to increase our position in our current markets, expand into adjacent and new markets, and optimize operational performance. Products or technologies developed by competitors may render our products or technologies obsolete or noncompetitive. We also may be unable to market and sell our products if they are not competitive on the basis of price, quality, technical performance, features, system compatibility, customized design, innovation, availability, delivery timing and reliability. If we fail to compete effectively on developing strategic relationships with customers and customer sales and technical support, our sales and revenue may be materially adversely affected.

The semiconductor industry has experienced, and may continue to experience, significant consolidation among companies and vertical integration among customers. Larger competitors resulting from consolidations may have certain advantages over us, and we may be at a competitive disadvantage if we fail to identify attractive opportunities to acquire companies to expand our business. Consolidation among competitors and integration among customers could erode our market share, impair our capacity to compete and require us to restructure operations, any of which could have a material adverse effect on our business.

In addition, some of our competitors may receive governmental subsidies or other incentives that give them a competitive advantage over us. For example, the U.S. and the European Union have enacted legislation to provide funding and incentives for semiconductor research, development, and manufacturing in their respective regions. If we are unable to access such funding or incentives, or if our competitors receive more funding or incentives than we do, we may be at a disadvantage in developing and producing new or improved products or technologies, which could adversely affect our market share, revenue and profitability.

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, 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 industry-wide excess manufacturing capacity, weak economic growth, and at times, the slowdown in capital spending. 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.

Global supply chain constraints have not had a material impact on our business. While we have experienced some volatilities with input material costs and supplier costs in accordance with domestic and global economic conditions, none of these have had a material impact to our business during our Fiscal 2023 year. We do not expect material increases in costs over the next twelve months. However, we expect to be subject to continued, broader-based inflationary, labor, and supplier cost increases in alignment with domestic and global economic conditions. We expect any increases in costs to be dilutive to our gross profit and we may be limited in our ability to offset any increased costs with price increases to customers. This may have a negative impact on our results from operations and cash flows.

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

Both we and our customers 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 their 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.

Risks Related to Our Products

If we fail to successfully develop, introduce and sell new products 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 IP and semiconductor products is highly competitive and dynamic. 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. 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 eFPGA IP development, software and silicon platform development, selling and marketing, long before we generate revenue, if any, from our efforts. Some of 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 by new products, which currently include our eFPGA IP licenses and professional services, EOS™, QuickAI™, SensiML Analytics Toolkit, ArcticLink® III, PolarPro®3, PolarPro II, PolarPro, and Eclipse II products. The new product revenues growth of our new products needs to be strong enough to achieve profitability. The gross margin associated with our eFPGA IP is generally higher than the gross margin of our devices. Within our device revenue, gross margins of mature products, as well as new products sold to Aerospace and Defense customers, are generally higher than when selling the same products to higher volume IoT and/or Consumer customers. While we expect revenue and gross profit growth from new products 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 eFPGA IP, EOS S3, ArcticLink and PolarPro solution platforms, and the development of additional new products and solutions.

If (i) we are unable to design, produce and sell new products 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 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 hardware products, or choose a competing offering, our revenue and gross margin of the new products will be materially harmed, which could have an overall adverse and potentially disproportionate effect on our business, results of operations, and financial condition.

If a market for our new products does not develop, or if our products do not meet customer needs, the loss of or reduction in orders could adversely affect our revenue and harm our business's 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 higher 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 on 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 hardware products 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 hardware products 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 products 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 defects in our products.

Difficulties encountered during the complex semiconductor manufacturing process can render a substantial percentage of semiconductor hardware products 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 hardware products, or that generated hardware products 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 back-end 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 the 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 provide assurance 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, as well as potential export restrictions, could materially and adversely affect our business and results of operations.

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.

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 of our total revenue in our Fiscal Year ended December 31, 2023. During our Fiscal Year ended December 31, 2023, one customer accounted for 70% of our total revenue. We expect this high level of customer concentration to decrease as we continue to market our solutions to additional Aerospace and Defense, Industrial, Computing and Communications customers. As in the past, future demand from this customer 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 products 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 from 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 hardware products.

We depend upon GlobalFoundries, TSMC, SkyWater Technologies, Honeywell Aerospace, Amkor Technology, Inc., Integra Specialty Products, JCET Group Co. Ltd., and Golden Altos Corp. to manufacture our new hardware products. The inability of any one of these companies to continue manufacture of our new hardware products for any reason would require us to identify and qualify a new foundry to manufacture our new hardware products. This would be time-consuming, difficult, and result in unforeseen operational problems. Alternate foundries might not be available to fabricate our new hardware 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 IoT 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 or 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 with 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 hardware products, and vendors for logistics. In general, each of our hardware products 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 hardware products 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 costs 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 hardware products 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, and suppliers of ASICs, suppliers of eFPGA IP.

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 an 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 to what we can provide with our products. Companies that supply ASICs, which may be purchased for a lower price at higher volumes, may 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 hardware products, 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.

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 provide assurance 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 provide assurance that we will meet all the conditions under these arrangements. We may end up 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

Not applicable.

ITEM 1C. CYBERSECURITY

In July 2023, the SEC adopted a new rule, *Cybersecurity Risk Management, Strategy, Governance, and Incident Disclosure*, which requires registrants to disclose material cybersecurity incidents they experience and to disclose on an annual basis material information regarding their cybersecurity risk management, strategy, and governance. For registrants, the final rules were effective September 5, 2023, with the new disclosures required beginning in annual reports for fiscal years ending on or after December 15, 2023. With respect to compliance with the incident disclosure requirements, all registrants other than smaller reporting companies must begin complying on December 18, 2023, with smaller reporting companies being given an additional 180 days, or June 15, 2024. The Company adopted these new cybersecurity disclosure requirements in the current fiscal year, as detailed below.

The Company's Board of Directors (the "Board") recognizes the critical importance of maintaining the trust and confidence of our customers, clients, business partners and employees. The Board is actively involved in oversight of the Company's risk management program, and cybersecurity represents an important component of the Company's overall approach to enterprise risk management ("ERM"). The Company's cybersecurity policies, standards, processes and practices are fully integrated into the Company's ERM program and are based on recognized cybersecurity industry frameworks established by the National Institute of Standards and Technology, and other applicable industry standards. This does not mean that we meet any particular technical standards, specifications, or requirements, but only that we use these frameworks as a guide to help us identify, assess, and manage cybersecurity risks relevant to our business. In general, the Company seeks to address cybersecurity risks through a comprehensive, cross-functional approach that is focused on preserving the confidentiality, security and availability of the information that the Company collects and stores by identifying, preventing and mitigating cybersecurity threats and effectively responding to cybersecurity incidents when they occur. Additionally, we utilize internal and external independent controls to monitor and mitigate the risk of these threats, including a Security Incident Response Plan ("SIRP") and periodic Information Technology training for all employees.

Cybersecurity Risk Management and Strategy

As one of the critical elements of the Company's overall ERM approach, the Company's cybersecurity risk management program includes the following key components:

- Risk assessments designed to help identify cybersecurity risks to our critical systems, information, services, and our broader enterprise IT environment.
- The IT team including its executive leadership is in charge of managing (i) our cybersecurity risk assessment processes, (ii) our security controls, and (iii) our response to security incidents.
- The Company deploys technical safeguards that are designed to protect the Company's information systems from cybersecurity threats, including firewalls, intrusion prevention and detection systems, anti-malware functionality and access controls, which are evaluated and improved through vulnerability assessments and cybersecurity threat intelligence.
- The Company has in place an incident response and recovery plan that addresses the Company's response to a cybersecurity incident.
- The Company maintains a comprehensive, risk-based approach to identifying and overseeing cybersecurity risks presented by external resources accessing the Company's systems, as well as the systems of third parties that could adversely impact our business in the event of a cybersecurity incident affecting those third-party systems.
- The Company provides regular, mandatory training for personnel regarding cybersecurity threats as a means to equip the Company's personnel with effective tools to address cybersecurity threats, and to communicate the Company's evolving information security policies, standards, processes and practices.

The Company engages in the periodic assessment and testing of the Company's policies, standards, processes and practices that are designed to address cybersecurity threats and incidents. These efforts include a wide range of activities, including audits, assessments, EDR tools, and PEN test exercises that focus on evaluating the effectiveness of our cybersecurity measures and planning. The Company regularly engages third parties to perform assessments on our cybersecurity measures, including audits and independent reviews of our information security control environment and operating effectiveness. The results of such assessments, audits and reviews are reported to the executive management team and the Board, and the Company adjusts its cybersecurity policies, standards, processes and practices as necessary based on the information provided by these assessments, audits and reviews.

We experienced a cyberattack in January 2023. We believe the incident has not had nor will have a material impact on our business, operations, ability to serve our customers, or financial results. At this time, we have not identified risks from known cybersecurity threats, including as a result of any prior cybersecurity incidents, that have materially affected us, including our operations, business strategy, results of operations, or financial condition. The impact of potential cybersecurity threats is difficult to predict, but one or more of them could result in the loss of information or capabilities, harm to individuals or property, damage to our reputation, loss of business, regulatory actions, and potential liability, any of which could have a material adverse effect on our financial position, results of operations and/or cash flows. These threats could lead to losses of sensitive information or capabilities, harm to personnel, infrastructure, or products, and/or damage to our reputation as well as our vendor's ability to perform on our contracts. *See "Risk Factors - Cyberattacks, like our 2023 cybersecurity incident, can lead to disruption of business, reduced revenue, increased costs, liability claims, or harm to our reputation or competitive position."*

Governance

The executive management team and the Board oversee the Company's ERM process, including the management of risks arising from cybersecurity threats. The executive management team and the Board each receive regular presentations and reports on cybersecurity risks, which address a wide range of topics including recent developments, evolving standards, vulnerability assessments, third-party and independent reviews, the threat environment, technological trends and information security considerations arising with respect to the Company's peers and third parties. The executive management team and the Board also receive prompt and timely information regarding any cybersecurity incident, as well as ongoing updates regarding any such incident until it has been addressed. On an annual basis, the executive management team and the Board discuss the Company's approach to cybersecurity risk management to monitor the prevention, detection, mitigation and remediation of cybersecurity threats and incidents in real time.

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, which is under lease until April 2027. Our subsidiary, SensiML Corp., occupies a 925 square feet facility space in Beaverton, Oregon, which is under lease until March 2025. We lease flexible workspace on a monthly basis for sales offices in Shanghai, China; London, England; and Taipei, Taiwan. We also lease sales office space in the Seoul Capital Area, South Korea on a short-term basis. 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.

The closing price of our common stock on the Nasdaq was [\$16.49] per share on March 22, 2024. As of March 22, 2024, there were [14,377,289] shares of common stock outstanding that were held of record by [93] 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.

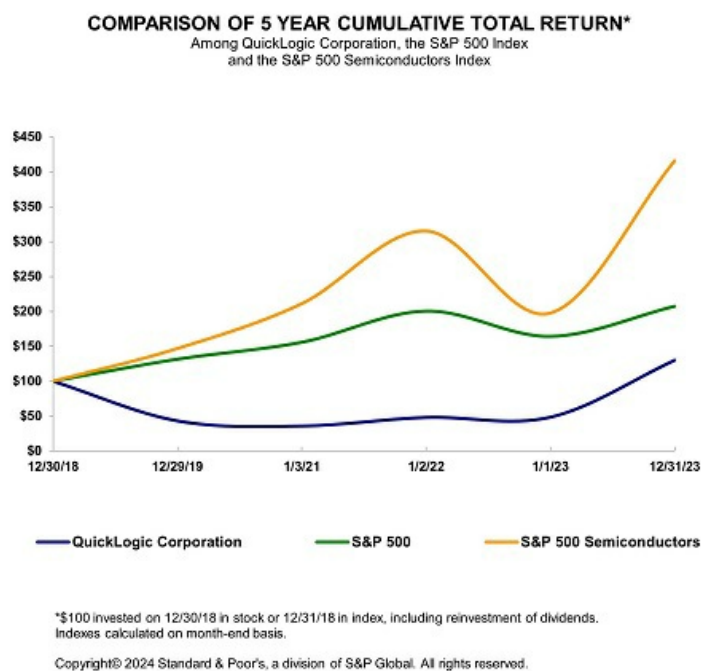
Equity Compensation Plan Information

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, 2018 to December 31, 2023 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, 2018 in QuickLogic's common stock and in each of the other two indices and the reinvestment of all dividends, if any, through December 31, 2023.

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.



	12/30/2018	12/29/2019	1/3/2021	1/2/2022	1/1/2023	12/31/2023
QuickLogic Corporation	100.00	43.00	35.58	47.98	48.26	130.13
S&P 500	100.00	131.49	155.68	200.37	164.08	207.21
S&P Semiconductors	100.00	146.76	210.93	315.02	197.46	415.46

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

ITEM 6. [RESERVED]

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

QuickLogic Corporation was founded in 1988 and reincorporated in Delaware in 1999. We provide innovative, programmable silicon and software platforms to enable our customers to develop custom hardware products in a fast time-to-market and cost-effective way. Specifically, we are a fabless semiconductor company with a variety of products: 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 Application Specific Integrated Circuit (ASIC) products, our SoCs to run our customers' 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 Aerospace, and Defense, Consumer/Industrial IoT, and Consumer Electronics markets.

Our new products include the following: eFPGA IP Licensing business, associated professional services, consisting of development and integration of eFPGA technology into custom semiconductor solutions, our silicon products consisting of EOS™, QuickAI™, ArcticLink® III, PolarPro®3, PolarPro II, PolarPro, and Eclipse II products. In addition to delivering our own semiconductor solutions, our new products category includes our AI/ML Software Platform from our wholly-owned subsidiary company, SensiML, which 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 products revenue category. Our mature products include primarily FPGA families named PASIC®3 and QuickRAM®, as well as programming hardware and design software.

For our IP and silicon platforms, we collaborate with multiple partners on co-marketing and/or co-selling initiatives. These partners could have primary business lines in semiconductor IP, Design Services, semiconductor foundry, semiconductor assembly and test, and others. For our AI/ML Software, SensiML collaborates with several microcontroller and sensor 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 Technologies, On Semiconductor Corp., Microchip Technology Inc., Silicon Laboratories, Inc., STMicroelectronics N.V., Arduino, NXP Semiconductors N.V., Raspberry Pi, and Nordic Semiconductor.

Our eFPGA IP is currently developed on 12nm, 16nm, 22nm, 28nm, 40nm, 65nm, 90nm, 130nm, and 250nm process nodes with a roadmap to more advanced nodes. The licensable IP is generated by our automated compiler tool called Australis™, which 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 a SoC company.

We have changed our manufacturing strategies to reduce the cost of our silicon solution platforms to enable their use in a range of unique products ranging from low to high volume. Our EOS S3, EOS S3AI, QuickAI and ArcticLink III silicon platforms combine mixed signal physical functions and hard-wired logic alongside our field programmable logic. Our EOS S3, EOS S3AI, and ArcticLink III solution platforms are manufactured on process nodes where we can benefit from smaller die sizes and lower power consumption. 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 customers' 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 costs, 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.

In order to grow our revenue from its current level, we depend upon increased revenue from our new products, including existing new product platforms and platforms currently in development. We expect our business growth to be driven mainly by eFPGA IP and our silicon solutions, with additional contributions from 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, sale, and marketing of our new solution platforms, IP, and software.

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We market our programmable logic (FPGAs and eFPGA IP) solutions primarily to Defense Industrial Base contractors, U.S. Government entities, System OEMs, and fabless semiconductor companies. These customers may value one or more of our product categories. 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 SoC and SensiML solutions to OEMs and ODMs offering differentiated Consumer/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 for our SoC and SensiML products include Consumer/Industrial IoT and Consumer Electronics.

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.

We monetize our technology through hardware product sales and eFPGA IP licenses, with any necessary corresponding work delivered via professional engineering services, SensiML Analytics Toolkit subscriptions, and per unit royalties. We specialize in enhancing the user experience in leading edge IoT hardware 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 hardware products.

Our embedded FPGA technology gives ASIC and SoC developers the benefit of flexibility to make design changes post-manufacturing changes at very fast time-to- and time-in-market, while keeping power consumption low. Our multi-core sensor processing products such as ArcticLink 3 S1, ArcticLink 3 S2, EOS 3, EOS S3 LV, and EOS S3AI 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 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.

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, FPGA User Tools, 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 our customers. We intend to continue to define and implement compelling solutions for our target customers and partners.

We believe our solutions are resonating with our target customers who value lower power consumption, platform design flexibility, 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 Japan 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.

Customers typically order our products through our distributors. Currently, we have eight active distributors in North America and a network of seventeen active distributors and sales representatives throughout Europe and Asia to support our international business. eFPGA IP customers and SensiML SaaS subscribers typically enter into licensing agreements directly with QuickLogic and SensiML, respectively.

We also have an Aerospace and Defense, industrial, and IoT product customer base that purchases our mature silicon products. We expect to continue to offer silicon hardware products to these customers, as well as new eFPGA IP for when these customers choose to implement their own silicon platform solution.

New products revenue for the Fiscal Year ended December 31, 2023 was \$18.2 million, an increase of \$6.5 million as compared to the Fiscal Year ended January 1, 2023. Of the \$18.2 million in new products revenue, approximately \$16.8 million was generated from eFPGA IP revenue, primarily eFPGA-related professional engineering services, as compared to approximately \$7.5 million in the Fiscal Year ended January 1, 2023. Mature products revenue for the Fiscal Year ended December 31, 2023 was \$3.0 million, a decrease of \$1.5 million compared to the Fiscal Year ended January 1, 2023. We shipped new products into multiple end market segments including Aerospace and Defense, Industrial, IoT, Consumer, and SaaS revenue from the new Artificial Intelligence ("AI") market beginning in the Fiscal Year ended December 31, 2023. We reported a net loss of \$0.3 million for the Fiscal Year ended December 31, 2023 compared to a net loss of \$4.3 million in the Fiscal Year ended January 1, 2023.

We have experienced net losses in the past years and expect to experience losses in at least some of the fiscal quarters during 2024 as we continue to develop new products, applications, and technologies. Our new hardware products and hardware products currently under development are generating stable gross margins year over year and higher margins than our mature products due to the markets that we have targeted, and the larger order quantities associated with these new products. New eFPGA products have been generating higher gross margins as a percentage of revenue. 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 \$2.3 million and \$3.5 million in proceeds that we received in March 2023 and March 2024, respectively, from the sale of our equity securities, and the revolving line of credit 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.

Impact of Supply Chain Disruptions on Business

We continue to experience increased product and logistics costs and impacts from the worldwide semiconductor supply shortage. The semiconductor supply shortage is due, in part, to increased demand across multiple industries resulting in a slowdown in production schedules. The semiconductor supply shortage is also impacting our supply chain and our ability to meet demand for some of our customers.

Our employees and customers

QuickLogic nurtures a culture of teams of employees operating in a committed, execution-oriented, and globally collaborative environment. Our close-knit, family-oriented team welcomes and encourages all perspectives and ideas to improve and innovate in our space, providing exciting career opportunities for the future of technology. Collaboration is deeply ingrained in how we work with each other and our customers. We offer competitive compensation and benefits. Many of our personnel work from home except a few personnel required for minimum operations. We embrace remote work and enable our employees to do their best work from anywhere in the United States, allowing them to balance their work obligations with their personal lives. We are committed to our customers to provide the support they need to continue providing vital services and tools.

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.

Although these estimates are based on our knowledge of current events and actions we may undertake in the future, actual results may ultimately materially differ from these estimates and assumptions. Areas where we use subjective judgment include, but are not limited to, revenue recognition, inventory valuation, including the identification of excess quantities, market value, and obsolescence, and valuation of goodwill and long-lived and intangible assets. 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 Accounting Standards Codification ("ASC") Topic 606 and related Accounting Standards Updates ("ASUs").

We earn revenue from principal activities by (i) delivering standard hardware products, (2) delivering and providing eFPGA IP products and professional services, (iii) and providing software as a service to customers, as well as (iv) other miscellaneous revenue.

In accordance with ASC 606, we apply a five-step model for recognizing revenue:

1. Identification of the contract, or contracts, with a customer,
2. Identification of the performance obligations in the contract,
3. Determination of the transaction price. We estimate the transaction price based on the amount expected to be received for transferring the performance obligations in the contract, which may include both fixed consideration and variable consideration. Our contracts with customers containing variable consideration are generally sales-based royalties, which is fully constrained.
4. Allocation of the transaction price to the performance obligations in the contract, and
5. Recognition of revenue when, or as, we satisfy a performance obligation.

When entering into a new contract, we evaluate certain factors including the customer's ability to pay, or credit risk.

The following is a description of our revenue recognition policy by principal activity:

Hardware Product Revenue

We generate revenue by supplying standard hardware products, which must be programmed before they can be used in an application. Standard hardware products may be programmed by us, distributors, end customers, or third parties. Contracts with customers for hardware products generally do not include other performance obligations such as services, extended warranties, or other material rights. Our promise to transfer hardware products is identified as a distinct performance obligation. We recognize revenue on hardware products when we transfer control of the promised products to the customer. Transfer of control of hardware products occurs when our performance obligation is satisfied, which typically occurs upon shipment from our manufacturing site or headquarters. We recognize revenue in an amount that reflects the consideration we expect to receive in exchange for those products, which also represents the standalone selling price (SSP) of our performance obligation. Hardware product prices are fixed. We elected a practical expedient in which we do not assess whether a contract has a significant financing component since our standard payment terms are less than one year. We allocate the transaction price of customer contracts to each distinct product based on its relative SSP. The sale of hardware products does not typically involve significant judgment or estimates by management. However, we do record an allowance for hardware product sales returns, which requires some judgment by management.

We recognized hardware product revenue of approximately \$4.0 million, or 19% of total revenue, \$8.1 million, or 50% of total revenue, and \$9.6 million, or 76% of total revenue, in the Fiscal Years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

Hardware Product Sales Return Allowance

While the terms and conditions of the sale of hardware products generally do not allow for refunds or product returns other than for warranty repairs, we do record an allowance for hardware product sales returns. The allowance for sales returns is based on a historical returns analysis of the prior four quarters that is performed on a quarterly basis. Amounts recorded for hardware product sales returns were \$8 thousand, \$2 thousand and a sales return reversal of \$13 thousand for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively, on our consolidated statements of operations. While hardware product sales returns have not been material to the company in recent reporting periods, we note there is an inherent uncertainty in estimating this allowance. In the case where actual results may significantly vary from management estimates, we may be required to make future adjustments to our revenues and operating results.

eFPGA IP Revenue

eFPGA IP revenue is comprised of eFPGA intellectual property revenue, eFPGA-related professional services revenue, and eFPGA-related support and maintenance revenue. We recognize eFPGA intellectual property revenue from licensing our eFPGA intellectual property to customers and recognize eFPGA-related professional services revenue from the fees associated with the custom development and integration of our technology solutions into hardware products. We recognize eFPGA revenue from support and maintenance services for post-implementation customer support ratably over the service term. Renewals of support and maintenance contracts create new performance obligations for which we recognize as revenue ratably over the service term. The majority of our revenue is derived from sales of eFPGA IP licenses and professional services.

eFPGA IP contractual arrangements often include promises to transfer intellectual property licenses, to customize hardware products, and to provide professional services and technical support services. We must determine whether the promised goods and services are distinct performance obligations that should be accounted for separately or are a single, combined performance obligation and should be accounted for together. In accordance with ASC 606, we must evaluate whether the customer can benefit from each good or service on its own or together with other resources that are readily available to the customer and whether the transfer of each good or service can be separately identifiable. We also must evaluate when control of the performance obligation is transferred to and accepted by the customer. We note these determinations, in addition to identifying contractual terms and conditions within the contract including termination for convenience clauses, enforceable rights to payment for performance completed-to-date, and consideration of the alternative use of the asset require significant judgment. In these judgments, we consider the context of the contract, historical experience with similar contracts, and the interdependency of the promised goods and services.

Additionally, judgment is required by management to allocate the transaction price to the separately identifiable performance obligations in the contract. We allocate the transaction price of the contract to each performance obligation based on its relative SSP. We rarely sell eFPGA intellectual property licenses on a standalone basis. Generally, we will provide eFPGA-related professional services and support and maintenance services to customers in conjunction with eFPGA IP licenses based on unique contractual arrangement terms and conditions. As such, we are required to estimate the SSP for each performance obligation.

In instances where the SSP is not directly observable because we do not sell the promised goods or services separately, we typically determine the SSP using either the adjusted market assessment approach or the expected cost plus a margin approach, depending on the characteristics and context of the deliverable. The selected method is applied by us consistently for similar arrangements and deliverables. The factors used to select the most appropriate estimation method, as well as select the most appropriate SSP include, but are not limited to, the extent of internal costs required to provide the promised performance obligation, margins achieved on standalone sales of similar products, profit objectives, cost structure, location-specific factors, and competition.

In other instances, we may have more than one SSP for individual performance obligations due to the stratification of those items by classes of customers and circumstances. In these instances, we may use information such as our overall pricing objectives, taking into consideration market conditions and other factors, including the value of its contracts, customer type, customer tier, type of the technology used, customer demographics, and geographic locations, among other factors. We also provide eFPGA-related professional services on a time-and-material basis.

Generally, we satisfy eFPGA-related contractual performance obligations over time as the customer simultaneously receives and consumes the benefits provided by our performance as we perform, our performance creates or enhances an asset that the customer controls as it is created or enhanced, or our performance does not create an asset with an alternative use to the company and we have an enforceable right to payment for performance completed to date. When we satisfy performance obligations over time, we recognize revenue by applying an over-time methodology that faithfully depicts our performance toward satisfaction of the performance obligation.

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Due to the nature of the work performed under contractual arrangements, the selection and application of an over-time methodology is complex and involves significant judgment. In the case of the selection of an input method, the key factors reviewed by management to estimate costs to complete each contract include, but are not limited to, 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 the case of the selection of an output method, key factors reviewed by management include, but are not limited to, the specific deliverables specified in the contracts with customers and the duration of performance, inclusive of delays. We have methods and controls in place for tracking labor-days incurred in completing eFPGA IP contracts, as well as quantifying changes in estimates used within the chosen methodology. We consider labor-days to be a critical estimate as any significant variation of labor and time required to complete a contractual arrangement could cause a revenue claw-back from prior periods and deferral of revenue to future periods.

When the expected consideration from a revenue contract with a customer is less than the expected costs of fulfilling the contract, we are required to first impair any capitalized costs associated with the contract. We are also required to recognize a provision for contract losses as a liability on our balance sheet. This would result in an unfavorable impact to income from operations.

We recognized eFPGA IP revenue of approximately \$16.8 million, or 79% of total revenue, \$7.5 million, or 47% of total revenue, and \$2.7 million, or 21% of total revenue, in the Fiscal Years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

SaaS and Other Revenue

SaaS & Other Revenue is comprised primarily of software as a service ("SaaS") revenue and software-related professional services revenue. SaaS revenue is generated when we license our software to customers and allow customers to access the software over a short-term subscription basis. We grant the customer the right to access and use software at the outset of the arrangement and throughout the entire term of the arrangement. We recognize SaaS revenue ratably over the license term. We recognize revenue from software-related professional services as services are provided to the customer.

Other miscellaneous revenue is comprised primarily of royalties from licensing our technology. We recognize royalty revenue on the later of (i) the subsequent sale or usage, or (ii) satisfaction of a performance obligation to which some or all of the sales-based royalty has been allocated.

We recognized SaaS and Other Revenue of approximately \$0.4 million, or 2% of total revenue, \$0.6 million, or 3% of total revenue, and \$0.4 million, or 3% of total revenue, in the Fiscal Years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

Practical Expedients, Elections, and Exemptions

- Taxes collected from customers and remitted to government authorities and that are related to the sales of our products are excluded from revenues.
- 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 consolidated statements of operations.
- 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.

Valuation of Inventories

Hardware product 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 trends and record reserves for quantities in excess of demand and for 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, and product merchantability, among other factors. 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 hardware product gross margin and hardware product inventory balances based on additional write-downs to net realizable value or a benefit from inventories previously written down. Estimates of market value for our products require subjective criteria such as anticipated demand and market acceptance for unique products. Differences between these estimates and actual results could result in gross margin volatilities from period to period.

Our hardware 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 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.

Goodwill

Goodwill represents the excess fair value of consideration transferred over the fair value of net assets acquired in a business combination. The carrying value of our goodwill is not amortized but is annually tested for impairment during our fourth fiscal quarter, and more often if there is an indicator of impairment. We either perform a qualitative assessment under ASC 350, including the consideration of factors such as macroeconomic conditions, industry and market considerations, and overall financial performance, or a quantitative assessment under ASU No. 2017-14, which involves comparing the carrying value of the reporting unit to its fair value. Subsequent to our annual impairment testing in the fourth quarters of 2023 and 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.

Long-Lived and Intangible Assets

Our long-lived assets include property and equipment, software, tooling, furniture and fixtures, leasehold improvements, and internal-use software. These assets are stated at cost less accumulated depreciation and amortization. Depreciation and amortization of long-lived assets is calculated on a straight-line basis over the estimated useful lives of the assets, generally one to ten years, with the amortization period of internal-use software being generally five years and the amortization period of leasehold improvements being the shorter of the lease term or the estimated useful lives of the assets, which is generally three to five years. We note the estimation of the useful lives of our long-lived assets involves judgment and estimation by management. In the determination of an asset's useful life, we consider the following factors: obsolescence, competition, historical product life cycles, and industry and market considerations, among others. Refer to Note 5 for additional information on the useful life ranges of our long-lived assets.

We recognize assets for pre-production design and development costs for which there is a contractual reimbursement by the customer. These assets are classified under 'tooling' within property and equipment and are depreciated over the estimated useful lives of the assets, generally seven years. Refer to Note 4 for additional information.

We capitalize costs related to the development and enhancement of hosted services we provide to our customers and the development and enhancement of other internally used engineering software as internal-use software. Costs incurred in the application development phase are capitalized and amortized on a straight-line basis over their useful lives, which are generally five to seven years. Costs related to planning and other preliminary project activities and post-implementation activities are expensed as incurred. We also capitalize costs related to internally used enterprise-level business and finance software in support of our operational needs as software.

We review the recoverability of our long-lived assets 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. We assess possible impairment based on our 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. In estimating future cash flows and the fair value of our long-lived assets, we consider changes in legal factors and the business climate, product and technology obsolescence, and competition. We performed an annual impairment assessment in the fourth quarters of 2023 and 2022 and deemed no impairment was necessary for the current or prior year. Subsequent to our annual impairment testing in the fourth quarters of 2023 and 2022, there were no indicators of impairment that gave cause for additional impairment testing of our long-lived assets. Additionally, we did not recognize any gains or losses on the disposal of equipment in the year ended December 31, 2023 and recognized gains on disposal of equipment of \$27 thousand in the year ended January 1, 2023.

Acquired intangible assets with finite useful lives are amortized on a straight-line basis over the periods benefited. We review the recoverability of our 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 our 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 these assets. In estimating future cash flows and the fair value of its intangible assets, we consider changes in legal factors and the business climate, product and technology obsolescence, and competition. We performed an annual impairment assessment in the fourth quarters of 2023 and 2022 and deemed no impairment was necessary for the current or prior year. Subsequent to our annual impairment testing in the fourth quarters of 2023 and 2022, there were no indicators of impairment that gave cause for additional impairment testing of our intangible assets. No impairment of intangible assets has been recognized to date.

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		
	2023	2022	2021
Statements of Operations:			
Revenue	100%	100%	100%
Cost of revenue	32%	46%	42%
Gross profit	68%	54%	58%
Operating expenses:			
Research and development	30%	31%	54%
Selling, general and administrative	38%	46%	63%
Operating income (loss)	—%	(23)%	(59)%
Interest expense	(1)%	(1)%	(1)%
Gain on forgiveness of PPP Loan	—%	—%	9%
Interest income and other (expense) income, net	(1)%	(2)%	—%
Income (loss) before income taxes	(2)%	(26)%	(51)%
Provision for income taxes	—%	—%	1%
Net income (loss)	(2)%	(26)%	(52)%

Comparison of Fiscal Years 2023 and 2022

Revenue. The table below sets forth the changes in revenue for Fiscal Year ended December 31, 2023, compared to Fiscal Year ended January 1, 2023 (in thousands, except percentage data):

	Fiscal Years				Year-Over-Year Change	
	2023		2022			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
New products	\$ 18,211	86%	\$ 11,675	72%	\$ 6,536	56%
Mature products	2,987	14%	4,505	28%	(1,518)	(34)%
Total revenue	\$ 21,198	100%	\$ 16,180	100%	\$ 5,018	31%

New products revenue consists of revenues from the sale of hardware 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 nanometer.

Total revenue increased approximately \$5 million, or 31% in Fiscal Year ended December 31, 2023 as compared to the Fiscal Year ended January 1, 2023. The increase in total revenue was comprised of an increase of \$6.5 million in new product revenue, partially offset by a decrease of \$1.5 million in mature product revenue.

New Products Revenue. The table below sets forth the changes in new products revenue for Fiscal Year ended December 31, 2023, compared to Fiscal Year ended January 1, 2023 (in thousands, except percentage data):

	Fiscal Years				Year-Over-Year Change	
	2023		2022			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
Hardware products	\$ 1,230	6%	\$ 3,757	23%	\$ (2,527)	(67)%
eFPGA IP	16,839	79%	7,545	47%	9,294	123%
SaaS & Other	142	1%	373	2%	(231)	(62)%
Total new products revenue	\$ 18,211	86%	\$ 11,675	72%	\$ 6,536	56%

The increase in new product revenue was primarily driven by an increase in eFPGA IP revenue, partially offset by a decrease in new hardware product revenue and SaaS & Other revenue. eFPGA IP revenue is comprised primarily of eFPGA intellectual property revenue, eFPGA-related professional services revenue, and eFPGA-related support and maintenance revenue. eFPGA IP revenue increased approximately \$9.3 million, or 123%, as compared to the Fiscal Year ended January 1, 2023. The increase in eFPGA IP revenue was primarily comprised of a \$9.2 million increase in eFPGA-related professional services revenue. SaaS & Other revenue decreased approximately \$0.2 million, or (62)% as compared to the Fiscal Year ended January 1, 2023. The decrease in SaaS & Other revenue was driven by a \$0.1 million decrease each in both software-related professional services revenue and SaaS-related revenue. New hardware revenue decreased by approximately \$2.5 million, or (67)%, in the Fiscal Year ended December 31, 2023 compared to the Fiscal Year ended January 1, 2023. The decrease in new hardware product revenue was primarily comprised of a reduction of \$1.0 million in display product revenue, \$0.9 million in connectivity product revenue, and \$0.7 million in sensor product revenue.

Contract liabilities (deferred revenue) associated with eFPGA-related professional services revenue was \$1.0 million and \$0.2 million and were included in deferred revenue on the consolidated balance sheets as of December 31, 2023 and January 1, 2023, respectively. Contract assets associated with eFPGA-related professional services revenue was \$3.6 million and \$2.0 million on the consolidated balance sheets as of December 31, 2023 and January 1, 2023, respectively.

Gross Profit. The table below sets forth the changes in gross profit for Fiscal Year ended December 31, 2023, compared to Fiscal Year ended January 1, 2023 (in thousands, except percentage data):

	Fiscal Years				Year-Over-Year Change	
	2023		2022			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
Revenue	\$ 21,198	100%	\$ 16,180	100%	\$ 5,018	31%
Cost of revenue	6,711	32%	7,378	46%	(667)	(9)%
Gross profit	\$ 14,487	68%	\$ 8,802	54%	\$ 5,685	65%

Gross profit in Fiscal Year 2023 compared to Fiscal Year 2022 increased approximately \$5.7 million, or 65%. The change in gross profit reflects an increase in revenue of \$5.0 million, or 31%, accompanied by a decrease in cost of revenue of \$0.7 million, or (9)%. The increase in revenue was driven by a \$6.5 million increase in new product revenue, primarily growth in eFPGA IP professional services revenue, partially offset by a \$1.5 million decrease in mature product revenue. The \$0.7 million decrease in cost of revenue was comprised of a decrease in product costs resulting from lower devices volumes and a decrease in R&D expense allocations to cost of revenues, partially offset by an increase in inventory reserves and contract manufacturer ("CM") costs.

In Fiscal Years 2023 and 2022, we capitalized costs associated with internal-use software of approximately \$1.1 million and \$0.7 million, respectively. For Fiscal Years 2023 and 2022, we recognized \$0.6 million and \$0.4 million, respectively in amortization expense of internal-use software in cost of revenues on our consolidated statements of operations.

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Our hardware 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 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. The sale of inventories previously written-off was approximately \$0.1 million and \$0.2 million in Fiscal Years 2023 and 2022, respectively. We wrote down approximately \$0.6 million and \$0.2 million to inventory reserves in Fiscal Years 2023 and 2022.

Operating Expenses. The table below sets forth the changes in operating expenses for Fiscal Year ended December 31, 2023 compared to Fiscal Year ended January 1, 2023 (in thousands, except percentage data):

	Fiscal Years				Year-Over-Year Change	
	2023		2022			
	Amount	% of Total Revenues	Amount	% of Total Revenues	Amount	Percentage
Research and development	\$ 6,448	30%	\$ 5,001	31%	\$ 1,447	29%
Selling, general and administrative	7,969	38%	7,601	47%	368	5%
Total operating expenses	<u>\$ 14,417</u>	<u>68%</u>	<u>\$ 12,602</u>	<u>78%</u>	<u>\$ 1,815</u>	<u>14%</u>

Research and Development Expenses. Our research and development 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 \$6.4 million and \$5 million in Fiscal Years 2023 and 2022, respectively, which represented 30% and 31%, respectively, of revenue for those periods. The \$1.4 million increase in R&D expenses in Fiscal Year 2023 as compared to Fiscal Year 2022 was primarily attributable to increases in employee salary, software maintenance, and financing arrangement expenses and reductions in the allocation of R&D expenses to cost of revenues, partially offset by a decrease in consulting costs, stock-based compensation, and outside services. R&D costs allocable to cost of revenues are included in cost of revenue in the consolidated statements of operations.

Selling, General and Administrative Expenses. Our selling, general and administrative ("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 \$7.6 million in Fiscal Years 2023 and 2022, respectively, which represented 38% and 47%, respectively, of revenue for those periods. The \$0.4 million increase in SG&A expenses in Fiscal Year 2023 as compared to Fiscal Year 2022 was primarily attributable to an increase in salaries and stock-based compensation costs, partially offset by a decrease in insurance and accounting and audit expenses.

Interest Expense and Interest Income and Other (Expense) Income, net. The table below sets forth the changes in interest expense and interest income and other (expense) income, net, for the Fiscal Year ended December 31, 2023, as compared to Fiscal Year ended January 1, 2023 (in thousands, except percentage data):

	Fiscal Years		Year-Over-Year Change	
	2023	2022	Amount	Percentage
Interest expense	\$ (215)	\$ (148)	\$ 67	(45)%
Interest income and other (expense) income, net	\$ (116)	\$ (221)	(105)	48%
Total interest expense and interest income and other (expense) income, net	<u>\$ (331)</u>	<u>\$ (369)</u>	<u>\$ (38)</u>	<u>10%</u>

Interest expense relates primarily to our line of credit facility. Interest income and other (expenses) income, net, relates to the interest earned on our money market accounts and foreign exchange gain or losses recorded.

Provision for Income Taxes. The table below sets forth the changes in provision for income taxes in the Fiscal Year ended December 31, 2023 compared to the Fiscal Year ended January 1, 2023 (in thousands, except percentage data):

	Fiscal Years		Year-Over-Year Change	
	2023	2022	Amount	Percentage
Provision for income taxes	<u>\$ 2</u>	<u>\$ 98</u>	<u>\$ (96)</u>	<u>(98)%</u>

Income tax expense for the Fiscal Year 2023 and 2022 relates primarily to foreign income tax provision for our India entity.

As of the end of Fiscal Year 2023, 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 2022 and 2021

For discussion related to the results of operations and changes in financial condition for Fiscal Year 2022 compared to Fiscal Year 2021, please refer to "Part II, Item 7. Management's Discussion and Analysis of Financial Conditions and Results of Operations" in our Fiscal Year 2022 Form 10-K, which was originally filed with the SEC on March 28, 2023.

Liquidity and Capital Resources

We have historically financed our operating losses and capital investments through the sale of our common stock, financing arrangements, operating leases, and cash flows provided by operations. We also have the ability to draw advances from our revolving facility with Heritage Bank of Commerce ("Heritage Bank"). As of December 31, 2023, our principal sources of liquidity consisted of cash, cash equivalents, and restricted cash of \$24.6 million, inclusive of \$20 million in advances from our revolving facility.

Our principal contractual commitments include purchase obligations, re-payments of advances from our revolving facility, and payments under financing arrangements and operating leases. Purchase obligations include amounts that are recorded on our consolidated balance sheets, as well as amounts that are not recorded on our consolidated balance sheets. Purchase obligations that are recorded on our consolidated balance sheets are largely comprised of open purchase order commitments to suppliers and to subcontractors. Our risk associated with these purchase obligations is limited to the termination liability provisions within those contracts and as such, we do not believe they represent a material liquidity risk to us. Purchase obligations not recorded on our consolidated balance sheets represent significant future obligations associated with ongoing eFPGA IP revenue contracts. These obligations are dependent on numerous variables and therefore, it is difficult to predict the amount and timing of payments which could differ materially from our estimates.

Credit Agreement

On December 21, 2018, we entered into an Amended and Restated Loan and Security Agreement with Heritage Bank (as amended, the "Loan Agreement") which among other things, provided a revolving facility ("Revolving Facility") allowing us to draw advances up to \$15.0 million. The Revolving Facility includes a number of customary and restrictive financial covenants including maintaining certain minimum cash levels with the lender. On December 8, 2023, we entered into the Seventh Amendment to the Loan Agreement, which increased the line of credit to \$20.0 million, extended the maturity date from December 31, 2024 to December 31, 2025, and increased the annual facility fee to \$60 thousand from \$45 thousand, payable each December 31st. Advances under the Revolving Facility bear a variable annual interest rate equal to one-half of one percent (0.50%) above the prime rate. On December 31, 2023, we had a \$20.0 million outstanding balance on the Revolving Facility with an interest rate of 9.00%. On January 1, 2023, we had a \$15.0 million outstanding balance on the Revolving Facility with an interest rate of 8.00%. We were in compliance with all loan covenants under the Loan Agreement, as of the end of the current reporting period.

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 Loan Agreement. See Note 7 to the consolidated financial statements for additional information.

Common Stock Offerings

On March 13, 2024, we entered into common stock purchase agreements with certain institutional investors and their affiliated entities for the sale of an aggregate of 223 thousand shares of common stock in a registered direct offering pursuant to an effective shelf registration statement on Form S-3, resulting in net cash proceeds of approximately \$3.5 million. Issuance costs related to the offering were immaterial.

On March 21, 2023, we entered into common stock purchase agreements with certain investors for the sale of an aggregate of 450 thousand shares of our common stock, in a registered direct offering pursuant to an effective shelf registration statement on Form S-3, resulting in net cash proceeds of approximately \$2.3 million. Issuance costs related to the offering were immaterial.

On September 14, 2022 and February 9, 2022, we entered into common stock purchase agreements with certain investors for the sale of an aggregate of 487 thousand and 310 thousand shares of common stock, respectively, in registered direct offerings pursuant to an effective shelf registration statement on Form S-3, resulting in net cash proceeds of approximately \$3.2 million and \$1.5 million, respectively. Issuance costs related to the September 14, 2022 and the February 9, 2022 offerings were immaterial.

On August 17, 2022, we filed a new Registration Statement on Form S-3 with the SEC to replace a previously expired Registration on Form S-3, under which we may sell, from time-to-time common stock, preferred stock, depositary shares, warrants, debt securities, and units, individually or as units comprised of one or more of the other securities or a combination thereof. Our registration statement became effective on August 26, 2022.

On September 22, 2021, we entered into a share subscription agreement for the sale of 125 thousand shares of our common stock. On September 30, 2021, we entered into a common stock purchase agreement for the sale of 74 thousand shares of our common stock, in a registered direct offering pursuant to an effective shelf registration statement on Form S-3. The net proceeds to the company in aggregate, after deducting equity issuance costs of approximately \$45 thousand was approximately \$1.0 million.

At January 2, 2023, warrants exercisable for 386 thousand shares of common stock at an exercise price of \$19.32 per share remained outstanding. These warrants were issued on May 29, 2018 and were exercisable any time for a period of 60 months. The warrants expired unexercised on May 29, 2023.

See Note 11 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 ("PPP Loan") under the Coronavirus Aid, Relief, and Economic Security Act enacted on March 27, 2020 ("CARES Act"). On June 5, 2020, the President of the United States signed into law the Paycheck Protection Flexibility Act ("PPFPA") to address many concerns expressed by the small business community. As of September 27, 2020, we fully utilized the loan proceeds in compliance with PPFPA guidelines. We applied for the full loan forgiveness in the fourth quarter of 2020 and on January 26, 2021 we received a notice from Heritage Bank that principal and interest amounts under the PPP Loan had been forgiven. See Note 7 to the consolidated financial statements for additional information.

Cash Flows

As of December 31, 2023, most of our cash and cash equivalents were invested in a Heritage Bank money market account. As of December 31, 2023, our interest-bearing debt consisted of \$1.4 million outstanding under finance arrangements and \$20 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 \$0.1 million and \$0.2 million as of December 31, 2023 and January 1, 2023, 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.

Our cash flows were as follows (in thousands):

	Fiscal Year		
	2023	2022	2021
Net cash provided by (used in) operating activities	\$ 4,847	\$ (4,056)	\$ (2,864)
Net cash provided by (used in) investing activities	(6,339)	(814)	(713)
Net cash provided by (used in) financing activities	6,897	4,466	434

Net Cash provided by (used in) Operating Activities

In Fiscal Year 2023, net cash provided by operating activities was \$4.8 million, which was primarily due to non-cash charges of \$5.3 million. Non-cash charges primarily consisted of stock-based compensation expense of \$2.5 million, depreciation and amortization of long-lived assets and certain definite-lived intangible assets of \$2.2 million, and write-down of inventories of \$0.6 million. Non-cash charges were partially offset by a net loss of \$0.1 million and changes in working capital of \$0.3 million. Changes in working capital consisted of an increase in contract assets of \$1.6 million, an increase in other assets of \$1.2 million, and a decrease in lease liabilities of \$0.4 million, partially offset by a decrease in accounts receivable of \$1.0 million, an increase in accrued liabilities of \$1.0 million, and an increase in deferred revenue of \$0.8 million. Historically, our operating cash flows represented cash used in operating activities.

In Fiscal Year 2022, net cash used in operating activities was \$4.1 million, which was primarily due to a net loss of \$4.3 million and changes in working capital of \$3.5 million, partially offset by non-cash charges of \$3.7 million. Changes in working capital consisted of an increase in accounts receivable of \$1.7 million, an increase in contract assets of \$1.7 million, an increase in inventories of \$0.6 million, a decrease in lease liabilities of \$0.4 million, an increase in other assets of \$0.3 million, and a decrease in deferred revenue of \$0.2 million, partially offset by an increase in trade payables of \$1.5 million. Non-cash charges primarily consisted of stock-based compensation expense of \$2.0 million, depreciation and amortization of long-lived assets and certain definite-lived intangible assets of \$1.5 million, and write-down of inventories of \$0.2 million.

Net Cash provided by (used in) Investing Activities

Net cash used in investing activities in Fiscal Year 2023 was approximately \$6.3 million, which was primarily attributable to capital expenditures related to property and equipment of \$5.6 million and the capitalization of internal-use software in the amount of \$1.0 million, partially offset by stock-based compensation capitalized to internal-use software in the amount of \$0.2 million.

Net cash used in investing activities in Fiscal Year 2022 was approximately \$0.8 million, which was primarily attributable to capital expenditures primarily related to property and equipment of \$0.1 million and the capitalization of internal-use software in the amount of \$0.7 million.

Net Cash provided by (used in) Financing Activities

In Fiscal Year 2023, net cash provided by financing activities was \$6.9 million, primarily attributable to an increase in our revolving credit facility in the amount of \$5 million and proceeds from the issuance of common stock in the amount of \$2.5 million, partially offset by \$0.7 million in payments related to financing arrangements.

In Fiscal Year 2022, net cash provided by financing activities was \$4.5 million, primarily attributable to proceeds from the issuance of common stock in the amount of \$4.9 million, partially offset by \$0.5 million in payments related to finance arrangements.

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 on December 31, 2025. 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.

Material Cash Requirements

The following discussion describes the material cash requirements from known contractual obligations and other obligations, and the effect such obligations are expected to have on our liquidity and cash flows in future fiscal periods. The following summarizes our material cash requirements as of December 31, 2023:

	Payments Due by Period				
	Total	Less than 1 year	1-3 Years	4-5 Years	More than 5 Years
Operating lease obligations	\$ 1,133	\$ 378	\$ 691	\$ 64	\$ —
Financing arrangements	1,407	946	461	—	—
Revolving Facility (1)	20,000	20,000	—	—	—
Purchase obligations:					
Wafer purchases (2)	—	—	—	—	—
Other purchase commitments	6,618	6,618	—	—	—
Liability of an estimated amount (3)	4,461	4,461	—	—	—
Total material cash requirements	\$ 33,619	\$ 32,403	\$ 1,152	\$ 64	\$ —

- (1) The current maturity date on our Revolving Facility is December 31, 2025. 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.
- (2) Certain 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.
- (3) Contingent obligations are estimated significant future obligations on eFPGA IP procurement contracts. See note 15 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 hardware products and for the supply of programming equipment. These services are typically provided by one supplier for each of our hardware products. We generally purchase these single or limited source services through standard purchase orders. Since 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 arrangements within the meaning of Item 303(b) of Regulation S-K.

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 by reference herein.

Changes from Prior Periodic Reports

In this Annual Report on Form 10-K, we have revised our disclosures to comply with SEC Release No. 33-10890 "Management's Discussion and Analysis, Selected Financial Data, Supplementary Financial Information" which became fully effective on August 9, 2021. This release was adopted to simplify and enhance certain financial disclosure requirements in Regulation S-K.

Specifically, the SEC eliminated the requirement for selected financial data, only requiring quarterly disclosure when there are retrospective changes affecting comprehensive income, and amending the matters required to be presented under Management's Discussion and Analysis. With our adoption of this release, we have eliminated from this document the items discussed above that are no longer required.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not applicable.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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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 December 31, 2023, and January 1, 2023, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2023, and the related notes and schedules (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2023, and January 1, 2023, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These 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 Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the 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 matters or on the accounts or disclosures to which it relates.

Write-downs of Excess and Obsolete Inventories

As described in Notes 1 and 4 to the consolidated financial statements, the Company's inventories balance was \$2.0 million as of December 31, 2023. 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 and obsolete inventories 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 determination of write-down of inventories requires management to make significant assumptions and subjective 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 write-down of inventories, in particular the estimates for excess and obsolete inventories, as a critical audit matter, because of the significant assumptions and subjective judgments used by management, which involved significant audit effort and the use of especially challenging and subjective auditor judgment when performing audit procedures and evaluating the results of those procedures.

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

- Evaluating the appropriateness of management's process for developing the estimates for excess and obsolete inventories by:
- Evaluating the methodology utilized to calculate the estimate.
 - Performing inquiries with management as to the composition of the reserve for aged inventory items without recent sales.
 - Assessing the appropriateness of the formulaic calculation and management adjustments by product type.
- Evaluating the reasonableness of the significant assumptions used by management including those related to future demand by:
 - Evaluating management's ability to provide reasonable forecast of sales by comparing management's prior period sales forecasts to actual results.
 - Performing inquiries with non-financial 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.
- Testing the completeness, accuracy, and relevance of the underlying data used in management's estimate.
- Testing the calculations related to the application of the methodology to specific inventory categories by agreement to supporting documentation and recalculation.

Revenue Recognition of Professional Services Contracts

As described in Notes 1 and 14 to the consolidated financial statements, the Company's eFPGA-related professional services revenue was approximately \$16.6 million for the year ended December 31, 2023. The Company's professional services revenue is generally recognized at a point in time when control of the asset is transferred to and accepted by the customer. However, at times, revenue is recognized over time when there is no alternative use for the contract asset and there is an enforceable right to payment for performance completed to date.

We have identified the timing of when control is transferred to the customer as a critical audit matter. Auditing this element of revenue recognition involved especially challenging auditor judgment in the determination of distinct performance obligations and an increased extent of auditor effort due to; (i) the existence of and variability in the termination for convenience clause within the contract including the enforceable right to payment for performance completed to date and (ii) consideration of the alternative use of the asset.

- Evaluating management's significant accounting policies related to these customer agreements for reasonableness.
- Evaluating the appropriateness of management's evaluation of various terms and conditions in revenue contracts by:
 - Obtaining and reading contract source documents, including master agreements, and other related documents.
 - Assessing the terms of the contracts and evaluating the appropriateness of management's application of their accounting policies, along with their use of estimates, in the determination of revenue recognition conclusions.
 - Testing management's identification and treatment of contract terms, including evaluating termination for convenience clauses and enforceable right to payment for performance completed to date, and assessing the evidence of alternative use for the contract asset.
 - Evaluating when the customer obtained control of each performance obligation and the timing of revenue recognized either over time or at a point in time.
- Assessing the appropriateness of the timing of revenue recognition for a sample of revenue contracts through:
 - Testing the mathematical accuracy of management's calculations of revenue and the associated timing of revenue recognized in the financial statements.

/s/ Moss Adams LLP

San Francisco, California
March 26, 2024

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

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

	December 31, 2023	January 1, 2023
ASSETS		
Current assets:		
Cash and cash equivalents and restricted cash	\$ 24,606	\$ 19,201
Accounts receivable, net of allowances for doubtful accounts of \$ 34 and \$18, as of December 31, 2023 and January 1, 2023, respectively	1,625	2,689
Contract assets	3,609	1,987
Note receivable	1,200	—
Inventories	2,029	2,493
Prepaid expenses and other current assets	1,561	1,570
Total current assets	34,630	27,940
Property and equipment, net	8,948	1,398
Capitalized internal-use software, net	2,069	1,514
Right of use assets, net	981	464
Intangible assets, net	537	645
Non-marketable equity investment	300	300
Goodwill	185	185
Other assets	142	140
TOTAL ASSETS	\$ 47,792	\$ 32,586
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Revolving line of credit	\$ 20,000	\$ 15,000
Trade payables	4,657	2,391
Accrued liabilities	2,673	1,509
Deferred revenue	1,052	272
Notes payable, current	946	448
Lease liabilities, current	302	402
Total current liabilities	29,630	20,022
Long-term liabilities:		
Lease liabilities, non-current	681	105
Notes payable, non-current	461	439
Other long-term liabilities	125	125
Total liabilities	30,897	20,691
Commitments and contingencies (Note 14)		
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; 14,118 and 13,202 shares issued and outstanding as of December 31, 2023 and January 1, 2023, respectively	14	13
Additional paid-in capital	322,436	317,174
Accumulated deficit	(305,555)	(305,292)
Total stockholders' equity	16,895	11,895
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 47,792	\$ 32,586

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		
	2023	2022	2021
Statements of Operations:			
Revenue	\$ 21,198	\$ 16,180	\$ 12,685
Cost of revenue	6,711	7,378	5,266
Gross profit	14,487	8,802	7,419
Operating expenses:			
Research and development	6,448	5,001	6,927
Selling, general and administrative	7,969	7,601	8,008
Operating income (loss)	70	(3,800)	(7,516)
Interest expense	(215)	(148)	(130)
Gain on forgiveness of PPP Loan	—	—	1,192
Interest income and other (expense) income, net	(116)	(221)	(43)
Income (loss) before income taxes	(261)	(4,169)	(6,497)
Provision for income taxes	2	98	119
Net income (loss)	\$ (263)	\$ (4,267)	\$ (6,616)
Net income (loss) per share: (1)			
Basic and diluted	\$ (0.02)	\$ (0.34)	\$ (0.57)
Weighted average shares: (1)			
Basic and diluted	13,453	12,588	11,535

(1) Note: Net income (loss) equals comprehensive income (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		
	2023	2022	2021
Cash flows provided by (used in) operating activities:			
Net income (loss)	\$ (263)	\$ (4,267)	\$ (6,616)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	1,807	1,147	1,004
ROU asset amortization	348	345	325
Stock-based compensation	2,522	2,035	2,526
Write-down of inventories	606	224	225
Gain on forgiveness of PPP Loan	—	—	(1,192)
Other	16	(9)	57
Changes in operating assets and liabilities:			
Accounts receivable	1,048	(1,708)	627
Contract assets	(1,622)	(1,692)	(295)
Inventories	(142)	(639)	385
Other assets	(958)	(220)	(444)
Trade payables	91	1,455	(2)
Accrued liabilities	1,003	(156)	325
Deferred revenue	780	(183)	403
Lease liabilities	(389)	(366)	(339)
Other long-term liabilities	—	(22)	147
Net cash provided by (used in) operating activities	4,847	(4,056)	(2,864)
Cash flows provided by (used in) investing activities:			
Capital expenditures for property and equipment	(5,467)	(142)	(180)
Capitalized internal-use software	(872)	(672)	(533)
Net cash provided by (used in) investing activities	(6,339)	(814)	(713)
Cash flows provided by (used in) financing activities:			
Payment of notes payable	(701)	(452)	(378)
Proceeds from notes payable	105	—	—
Proceeds from line of credit	65,000	60,000	60,000
Repayment of line of credit	(60,000)	(60,000)	(60,000)
Proceeds from issuance of common stock	200	253	263
Proceeds from issuance of common stock to investors	2,313	4,682	1,079
Stock issuance costs	(20)	(17)	(45)
Taxes paid related to net settlement of equity awards	—	—	(485)
Net cash provided by (used in) financing activities	6,897	4,466	434
Net increase (decrease) in cash, cash equivalents and restricted cash	5,405	(404)	(3,143)
Cash, cash equivalents and restricted cash at the beginning of the period	19,201	19,605	22,748
Cash, cash equivalents, and restricted cash at the end of the period	\$ 24,606	\$ 19,201	\$ 19,605
Supplemental disclosures of cash flow information:			
Interest paid	\$ 81	\$ 86	\$ 77
Income taxes paid	\$ 14	\$ 16	\$ 73
Supplemental schedule of non-cash investing and financing activities:			
Purchases of property and equipment with financing arrangements	\$ 1,116	\$ 650	\$ 690
Stock-based compensation capitalized as internal-use software	\$ 248	\$ —	\$ —
Purchases of property and equipment in accounts payable	\$ 2,101	\$ 1	\$ 1

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

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

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			
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 of \$ 45 thousand	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
Common stock issued under stock plans and employee stock purchase plans	542	—	253	—	253
Common stock offering, net of issuance costs	797	1	4,664	—	4,665
Stock-based compensation	—	—	2,035	—	2,035
Net loss	—	—	—	(4,267)	(4,267)
Balance at January 1, 2023	13,202	13	317,174	(305,292)	11,895
Common stock issued under stock plans and employee stock purchase plans	466	1	199	—	200
Common stock offering, net of issuance costs	450	—	2,293	—	2,293
Stock-based compensation	—	—	2,770	—	2,770
Net loss	—	—	—	(263)	(263)
Balance at December 31, 2023	14,118	\$ 14	\$ 322,436	\$ (305,555)	\$ 16,895

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

NOTE 1 — THE COMPANY AND BASIS OF PRESENTATION

QuickLogic Corporation was founded in 1988 and reincorporated in Delaware in 1999. The Company provides innovative, programmable silicon and software platforms to enable its customers to develop custom hardware products in a fast time-to-market and cost-effective way. Specifically, QuickLogic is a fabless semiconductor company with a variety of products: embedded FPGA ("eFPGA") intellectual property ("IP"), low power, multi-core semiconductor system-on-chips ("SoCs"), discrete FPGAs, and AI software. QuickLogic's customers can use its eFPGA IP for hardware acceleration and pre-processing in their Application Specific Integrated Circuit (ASIC) products, the Company's SoCs to run its customers' software and build their hardware around, and the Company's discrete FPGAs to implement their custom functionality. The Analytics Toolkit from SensiML Corporation ("SensiML"), the Company's 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 Aerospace, and Defense, Consumer/Industrial IoT, and Consumer Electronics markets.

QuickLogic's Fiscal Year ends on the Sunday closest to December 31. Fiscal Years 2023, 2022, and 2021 ended on December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

The Company has one reportable business segment based on how its Chief Operating Decision Maker (CODM) manages the business and in a manner consistent with the internal reporting provided to the CODM. The CODM, the Company's Chief Executive Officer (CEO), reviews detailed income statements, balance sheets, and sales reports in order to assess performance of the Company. Sales and operating income are some of the key variables monitored by the CODM and management when determining the Company's financial condition and operating performance.

Liquidity

The Company has financed its operations and capital investments through the sale of common stock, financing arrangements, operating leases, a revolving line of credit, and cash flows from operations. As of December 31, 2023, the Company's principal sources of liquidity consisted of cash and cash equivalents of \$ 24.6 million, inclusive of a \$ 20 million advance from its Revolving Facility with Heritage Bank of Commerce ("Heritage Bank").

The Company's principal contractual commitments include purchase obligations, re-payments of draw-downs from the revolving line of credit, and payments under operating and finance arrangements. Purchase obligations are largely comprised of open purchase order commitments to suppliers. The Company's risk associated with the purchase obligations is limited to the termination liability provisions within those contracts and as such, the Company does not believe they represent a material liquidity risk. See Note 7 for additional information.

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 a loan agreement. See Note 7 for additional information.

On March 21, 2023, the Company entered into common stock purchase agreements with certain investors for the sale of an aggregate of 450 thousand shares of its common stock, in a registered direct offering pursuant to an effective shelf registration statement on Form S-3, resulting in net cash proceeds of approximately \$ 2.3 million. Issuance costs related to the offering were immaterial.

On September 14, 2022 and February 9, 2022, the Company entered into common stock purchase agreements with certain investors for the sale of an aggregate of 487 thousand and 310 thousand shares of common stock, respectively, in registered direct offering pursuant to an effective shelf registration statement on Form S-3, resulting in net cash proceeds of approximately \$ 3.2 million and \$ 1.5 million, respectively. Issuance costs related to the September 14, 2022 and the February 9, 2022 offerings were immaterial.

On September 22, 2021, the Company entered into a share subscription agreement for the sale of 125 thousand of its common stock. On September 30, 2021, the Company entered into a common stock purchase agreement for the sale of 74 thousand shares of its common stock, in a registered direct offering pursuant to an effective shelf registration statement on Form S-3. The net proceeds to the Company in aggregate, after deducting equity issuance costs of approximately \$ 45 thousand was approximately \$ 1.0 million. See Note 11 for additional information.

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 \$ 2.3 million gross cash proceeds from the March 21, 2023 financing, its revenues from operations, and the 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 cyclical nature of the semiconductor industry; the conversion of design opportunities into revenue; market acceptance of existing and new products including solutions based on the Company's ArcticLink® and PolarPro® platforms, ArcticPro™, EOS S3 SoC, Quick AI solution, QuickAI™, SensiML Analytics Toolkit, Eclipse II products, and eFPGA IP license and professional services; 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 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 on December 31, 2025, 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 and the disclosures of commitments and contingencies at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods.

The methods, estimates, and judgments the Company uses in applying its most critical accounting policies have a significant impact on the results it reports in its consolidated financial statements. The SEC has defined critical accounting policies as those that are most important to the portrayal of the Company's financial condition and results of operations and requires it to make its most difficult and subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain.

Although these estimates are based on the Company's knowledge of current events and actions it may undertake in the future, actual results may ultimately materially differ from these estimates and assumptions. Areas where management uses subjective judgment include, but are not limited to, revenue recognition, inventory valuation, including the identification of excess quantities, market value, and obsolescence, and valuation of goodwill and long-lived and intangible assets. The Company believes that it applies 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 the Company's financial statements.

Revenue Recognition

The Company recognizes revenue in accordance with Accounting Standards Codification ("ASC") Topic 606 and related Accounting Standards Updates ("ASUs").

The Company earns revenue from principal activities by (i) delivering standard hardware products, (ii) delivering and providing eFPGA IP products and professional services, (iii) and providing software as a service to customers, as well as (iv) other miscellaneous revenue.

In accordance with ASC 606, the Company applies a five-step model for recognizing revenue

1. Identification of the contract, or contracts, with a customer,
2. Identification of the performance obligations in the contract,
3. Determination of the transaction price. The Company estimates the transaction price based on the amount expected to be received for transferring the performance obligations in the contract, which may include both fixed consideration and variable consideration. The Company's contracts with customers containing variable consideration are generally sales-based royalties, which is fully constrained.
4. Allocation of the transaction price to the performance obligations in the contract, and
5. Recognition of revenue when, or as, the Company satisfies a performance obligation.

When entering into a new contract, the Company evaluates certain factors including the customer's ability to pay, or credit risk.

The following is a description of the Company's revenue recognition policy by principal activity:

Hardware Product Revenue

The Company generates revenue by supplying standard hardware products, which must be programmed before they can be used in an application. Standard hardware products may be programmed by the Company, distributors, end customers, or third parties. Contracts with customers for hardware products generally do not include other performance obligations such as services, extended warranties, or other material rights. The Company's promise to transfer hardware products is identified as a distinct performance obligation. The Company recognizes revenue on hardware products when it transfers control of the promised products to the customer. Transfer of control of hardware products occurs when its performance obligation is satisfied, which typically occurs upon shipment from the Company's manufacturing site or headquarters. The Company recognizes revenue in an amount that reflects the consideration it expects to receive in exchange for those products, which also represents the standalone selling price (SSP) of its performance obligation. Hardware product prices are fixed. The Company elected a practical expedient in which it does not assess whether a contract has a significant financing component since its standard payment terms are less than one year. The Company allocates the transaction price of customer contracts to each distinct product based on its relative SSP. The sale of hardware products does not typically involve significant judgment or estimates by management. However, the Company does record an allowance for hardware product sales returns, which requires some judgment by management.

Hardware Product Sales Return Allowance

While the terms and conditions of the sale of hardware products generally do not allow for refunds or product returns other than for warranty repairs, the Company does record an allowance for hardware product sales returns. The allowance for sales returns is based on a historical returns analysis of the prior four quarters that is performed on a quarterly basis. Amounts recorded for hardware product sales returns were \$ 8 thousand, \$ 2 thousand and a sales return reversal of \$ 13 thousand for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively, on the Company's consolidated statements of operations. While hardware product sales returns have not been material to the Company in recent reporting periods, the Company notes there is an inherent uncertainty in estimating this allowance. In the case where actual results may significantly vary from management estimates, the Company may be required to make future adjustments to its revenues and operating results.

eFPGA IP Revenue

eFPGA IP revenue is comprised of eFPGA intellectual property revenue, eFPGA-related professional services revenue, and eFPGA-related support and maintenance revenue. The Company recognizes eFPGA intellectual property revenue from licensing its eFPGA intellectual property to customers and recognizes eFPGA-related professional services revenue from the fees associated with the custom development and integration of the Company's technology solutions into hardware products. The Company recognizes eFPGA revenue from support and maintenance services for post-implementation customer support ratably over the service term. Renewals of support and maintenance contracts create new performance obligations for which the Company recognizes as revenue ratably over the service term. The majority of the Company's revenue is derived from sales of eFPGA IP licenses and professional services.

eFPGA IP contractual arrangements often include promises to transfer intellectual property licenses, to customize hardware products, and to provide professional services and technical support services. The Company must determine whether the promised goods and services are distinct performance obligations that should be accounted for separately or are a single, combined performance obligation and should be accounted for together. In accordance with ASC 606, the Company must evaluate whether the customer can benefit from each good or service on its own or together with other resources that are readily available to the customer and whether the transfer of each good or service can be separately identifiable. The Company also must evaluate when control of the performance obligation is transferred to and accepted by the customer. The Company notes these determinations, in addition to identifying contractual terms and conditions within the contract including termination for convenience clauses, enforceable rights to payment for performance completed-to-date, and consideration of the alternative use of the asset require significant judgment. In these judgments, the Company considers the context of the contract, historical experience with similar contracts, and the interdependency of the promised goods and services.

Additionally, judgment is required by management to allocation the transaction price to the separately identifiable performance obligations in the contract. The Company allocates the transaction price of the contract to each performance obligation based on its relative SSP. The Company rarely sells eFPGA intellectual property licenses on a standalone basis. Generally, the Company will provide eFPGA-related professional services and support and maintenance services to customers in conjunction with eFPGA IP licenses based on unique contractual arrangement terms and conditions. As such, the Company is required to estimate the SSP for each performance obligation.

In instances where the SSP is not directly observable because the Company does not sell the promised goods or services separately, the Company typically determines the SSP using either the adjusted market assessment approach or the expected cost plus a margin approach, depending on the characteristics and context of the deliverable. The selected method is applied by the Company consistently for similar arrangements and deliverables. The factors used to select the most appropriate estimation method, as well as select the most appropriate SSP include, but are not limited to, the extent of internal costs required to provide the promised performance obligation, margins achieved on standalone sales of similar products, profit objectives, cost structure, location-specific factors, and competition.

In other instances, the Company may have more than one SSP for individual performance obligations due to the stratification of those items by classes of customers and circumstances. In these instances, the Company may use information such as its overall pricing objectives, taking into consideration market conditions and other factors, including the value of its contracts, customer type, customer tier, type of the technology used, customer demographics, and geographic locations, among other factors. The Company also provides eFPGA-related professional services on a time-and-material basis.

Generally, the Company satisfies eFPGA-related contractual performance obligations over time as the customer simultaneously receives and consumes the benefits provided by the Company's performance as it performs, the Company's performance creates or enhances an asset that the customer controls as it is created or enhanced, or the Company's performance does not create an asset with an alternative use to the Company and the Company has an enforceable right to payment for performance completed to date. When the Company satisfies performance obligations over time, it recognizes revenue by applying an over-time methodology that faithfully depicts the Company's performance toward satisfaction of the performance obligation.

The Company's over-time methodologies include, but are not limited to the following:

- Revenue recognition model measured using an input method such as units of labor,
- Revenue recognition model measured using an output method reflecting a generally consistent effort to satisfy performance obligations throughout the contractual arrangement term,
- Revenue recognition model measured using an output method such as the specific deliverables produced,
- Revenue recognition model measured using an input method such as time and material for professional engineering services. For revenue derived from time and material inputs, the Company estimates a fully-burdened overhead rate for the labor and any materials required.

Due to the nature of the work performed under contractual arrangements, the selection and application of an over-time methodology is complex and involves significant judgment. In the case of the selection of an input method, the key factors reviewed by management to estimate costs to complete each contract include, but are not limited to, 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 the case of the selection of an output method, key factors reviewed by management include, but are not limited to, the specific deliverables specified in the contracts with customers and the duration of performance, inclusive of delays. The Company has methods and controls in place for tracking labor-days incurred in completing eFPGA IP contracts, as well as quantifying changes in estimates used within the chosen methodology. Management considers labor-days to be a critical estimate as any significant variation of labor and time required to complete a contractual arrangement could cause a revenue claw-back from prior periods and deferral of revenue to future periods.

When the expected consideration from a revenue contract with a customer is less than the expected costs of fulfilling the contract, the Company is required to first impair any capitalized costs associated with the contract. The Company is also required to recognize a provision for contract losses as a liability on its balance sheet. This would result in an unfavorable impact to income from operations.

SaaS & Other Revenue

SaaS & Other Revenue is comprised primarily of software as a service ("SaaS") revenue and software-related professional services revenue. SaaS revenue is generated when the Company licenses its software to customers and allows customers to access the software over a short-term subscription basis. The Company grants the customer the right to access and use software at the outset of the arrangement and throughout the entire term of the arrangement. The Company recognizes SaaS revenue ratably over the license term. The Company recognizes revenue from software-related professional services as services are provided to the customer.

Other miscellaneous revenue is comprised primarily of royalties from licensing the Company's technology. The Company recognizes royalty revenue on the later of (i) the subsequent sale or usage, or (ii) satisfaction of a performance obligation to which some or all of the sales-based royalty has been allocated.

Practical Expedients, Elections, and Exemptions

- Taxes collected from customers and remitted to government authorities and that are related to the sales of the Company's products are excluded from revenues.
- 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 consolidated statements of operations.
- The Company does 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 it recognizes revenue at the amount to which it has the right to invoice for the services performed.

Valuation of Inventories

Hardware product 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. The Company routinely evaluates quantities and values of its inventories in light of current market conditions and trends and records reserves for quantities in excess of demand and for product obsolescence. The evaluation may take into consideration historic usage, expected demand, anticipated sales price, the stage in the product life cycle of the Company's 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, and product merchantability, among other factors. Actual consumption of inventories could differ from forecasted demand and this difference could have a material impact on the Company's gross margin and inventory balances based on additional provisions for excess or obsolete inventories or a benefit from inventories previously written down. The Company also regularly reviews the cost of inventories against estimated market value and records 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 its hardware product gross margin and hardware product inventory balances based on additional write-downs to net realizable value or a benefit from inventories previously written down. Estimates of market value for the Company's products require subjective criteria such as anticipated demand and market acceptance for unique products. Differences between these estimates and actual results could result in gross margin volatilities from period to period.

The Company's hardware 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 the Company continues to develop new products, the Company believes its 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 the Company makes every effort to ensure the accuracy of its 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 its inventory and its results of operations.

Goodwill

Goodwill represents the excess fair value of consideration transferred over the fair value of net assets acquired in a business combination. The carrying value of goodwill is not amortized but is annually tested for impairment during the Company's fourth fiscal quarter, and more often if there is an indicator of impairment. The Company either performs a qualitative assessment under ASC 350, including the consideration of factors such as macroeconomic conditions, industry and market considerations, and overall financial performance, or a quantitative assessment under ASU No. 2017-14, which involves comparing the carrying value of the reporting unit to its fair value. Subsequent to the Company's annual impairment testing in the fourth quarter of 2023 and 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.

Long-Lived and Intangible Assets

The Company's long-lived assets include property and equipment, software, tooling, furniture and fixtures, leasehold improvements, and internal-use software. These assets are stated at cost less accumulated depreciation and amortization. Depreciation and amortization of long-lived assets is calculated on a straight-line basis over the estimated useful lives of the assets, generally one to ten years, with the amortization period of internal-use software being generally five years and the amortization period of leasehold improvements being the shorter of the lease term or the estimated useful lives of the assets, which is generally three to five years. The Company notes the estimation of the useful lives of its long-lived assets involves judgment and estimation by management. In the determination of an asset's useful life, the Company considers the following factors: obsolescence, competition, historical product life cycles, and industry and market considerations, among others. Refer to Note 5 for additional information on the useful life ranges of the Company's long-lived assets.

The Company recognizes assets for pre-production design and development costs for which there is a contractual reimbursement by the customer. These assets are classified under 'tooling' within property and equipment and are depreciated over the estimated useful lives of the assets, generally seven years. Refer to Note 4 for additional information.

The Company capitalizes costs related to the development and enhancement of hosted services it provides to its customers and the development and enhancement of other internally used engineering software as internal-use software. Costs incurred in the application development phase are capitalized and amortized on a straight-line basis over their useful lives, which are generally five to seven years. Costs related to planning and other preliminary project activities and post-implementation activities are expensed as incurred. The Company also capitalizes costs related to internally used enterprise-level business and finance software in support of the Company's operational needs as software.

The Company reviews the recoverability of its long-lived assets 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 Company assesses possible impairment based on its 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. In estimating future cash flows and the fair value of its long-lived assets, the Company considers changes in legal factors and the business climate, product and technology obsolescence, and competition. The Company performed an annual impairment assessment in the fourth quarter of 2023 and 2022 and deemed no impairment was necessary for the current or prior year. Subsequent to the Company's annual impairment testing in the fourth quarter of 2023 and 2022, there were no indicators of impairment that gave cause for additional impairment testing of the Company's long-lived assets. Additionally, the Company did not recognize any gains or losses on the disposal of equipment in the year ended December 31, 2023 and recognized gains on disposal of equipment of \$ 27 thousand in the year ended January 1, 2023.

Acquired 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 these assets. In estimating future cash flows and the fair value of its intangible assets, the Company considers changes in legal factors and the business climate, product and technology obsolescence, and competition. The Company performed an annual impairment assessment in the fourth quarter of 2023 and 2022 and deemed no impairment was necessary for the current or prior year. Subsequent to the Company's annual impairment testing in the fourth quarter of 2023 and 2022, there were no indicators of impairment that gave cause for additional impairment testing of the Company's intangible assets. No impairment of intangible assets has been recognized to date.

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.

Allowance for Doubtful Accounts

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.

The Company provides an allowance for doubtful accounts based on both historical experience and a specific identification basis. As of December 31, 2023 and January 1, 2023, the allowance for doubtful accounts was \$ 34 thousand and \$ 18 thousand, respectively, in its consolidated balance sheets. Bad debt expense for the years ended December 31, 2023, January 1, 2023, and January 2, 2022 was \$ 24 thousand, \$ 16 thousand, and \$ 62 thousand, respectively.

Contract Balances

Due to the terms in contractual agreements with customers, the timing of revenue recognition may differ from the timing of invoicing to customers, and these timing differences result in accounts receivables, contract assets, or contract liabilities on the Company's consolidated balance sheets.

The Company records a contract asset when revenue is recognized prior to invoicing if the Company does not have the unconditional right to invoice the customer. The Company records a contract liability (deferred revenue) when revenue is recognized subsequent to invoicing and also when consideration is received in advance of satisfying performance obligations. Balances in contract assets are transferred to accounts receivable when the Company has an unconditional right to invoice the customer. Balances in contract liabilities (deferred revenue) are recognized as revenue once the performance obligations are satisfied, as control of goods and services are transferred to the customer, all revenue recognition criteria have been met, and any constraints have been resolved. Payment terms and conditions vary by term of contracts with the customer. The Company's contracts do not include a significant financing component. The Company's invoicing terms provide customers with simplified and predictable ways of purchasing the Company's goods and services and not to facilitate financing arrangements. The timing between invoicing and when payment is due is not significant. The Company defers costs until related revenue is recognized.

The Company had contract assets associated with eFPGA-related professional services revenue of approximately \$ 3.6 million, \$ 2.0 million, and \$ 0.3 million and contract liabilities (reflected as deferred revenue) associated with eFPGA-related professional services revenue of \$ 1.1 million, \$ 0.3 million, and \$ 0.5 million on the consolidated balance sheets at December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

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 December 31, 2023 and January 1, 2023 met the capitalization criteria and as such, there are no costs deferred nor recognized as assets on the consolidated balance sheets at December 31, 2023, and January 1, 2023.

Current Expected Credit Losses

The current expected credit loss ("CECL") reserve required under ASU 2016-13 "Financial Instruments - Credit Losses - Measurement of Credit Losses on Financial Instruments (Topic 326)" ("ASU 2016-13"), reflects the Company's current estimate of potential credit losses related to its financing receivables. As of January 1, 2023, the Company's CECL reserve was \$ 0 . Subsequent changes to the CECL reserve are recognized through a provision for or reversal of current expected credit loss reserve on the Company's consolidated statement of operations. ASU 2016-13 specifies the reserve should be based on relevant information about past events, including historical loss experience, market conditions, and reasonable and supportable macroeconomic forecasts for the duration of each financing receivable. For each financing receivable, the Company performs an annual quantitative assessment of the impact of CECL using a probability-of-default method. This includes estimating the probability that the loan will default before its maturity (probability of default) and the amount of the loss if the loan defaults (loss given default). These two factors result in an expected loss percentage that is applied to the balance of each financing receivable to determine the expected credit loss. The Company adjusts these factors for current conditions, including the financial condition of the borrower, the probability that it will grant the borrower a concession through modification of the loan terms, and reasonable and supportable forecasts of future losses as necessary.

Financing Arrangements & Correction of an Immaterial Error

The Company previously classified certain licensed tooling software as leased assets and liabilities under ROU assets and financing lease liabilities pursuant to lease accounting under ASC 842, Leases. Upon further analysis, the Company determined these amounts are intangible assets subject to amortization in accordance with ASC 350, Intangibles, Goodwill, and Other and financed through financing arrangements. As a result, the Company corrected immaterial errors to revise its financial statements as of January 1, 2023, to present \$933 thousand as property and equipment, net instead of a right of use asset, and to present \$887 thousand as notes payable instead of finance leases. \$616 thousand was incorporated into the Company's accumulated amortization for property and equipment balance as of January 1, 2023.

The statements of cash flows have been revised to present non-cash investing and financing activities of \$ 650 thousand and \$ 690 thousand for property and equipment purchased through financing arrangements during the fiscal years ended January 1, 2023 and January 2, 2022, respectively, previously presented as finance lease obligations. Cash payments on notes payable during the fiscal years ended January 1, 2023 and January 2, 2022 were \$ 452 thousand and \$ 378 thousand, respectively, instead of presented as payments of finance lease obligations. Refer to Note 7 for additional information.

The Company has determined the correction of this error did not have a material impact on the Company's financial statements for any of the periods presented.

Leases

The Company accounts for leases under ASC 842 and related ASUs. Under ASC 842, all significant lease arrangements are generally recognized at the lease commencement date. Right-of-use ("ROU") assets and lease liabilities are recorded in the Company's consolidated balance sheet. The Company determines if an arrangement is a lease at inception. When an arrangement is a lease, the Company determines if it is an operating lease or a finance lease. Lease liabilities represent the present value of the Company's future lease payments over the expected lease term, which includes options to extend or terminate the lease when it is reasonably certain those options will be exercised. The present value of a lease liability is determined using the Company's incremental collateralized borrowing rate at lease inception. ROU assets represent the Company's right to control the use of the leased asset during the lease and are recognized in an amount equal to the lease liability for leases with an initial term greater than 12 months. An ROU asset may also include lease payments related to initial direct costs and prepayments and excludes lease incentives. The Company does not apply lease recognition requirements to lease arrangements having terms of twelve months or less. Instead, it recognizes payments in the consolidated statement of operations as rental costs on a straight-line basis over the lease term. The Company has lease agreements which contain lease and non-lease components; non-lease components are generally accounted for separately.

The Company's ROU assets were approximately \$ 1 million and \$ 0.5 million and lease liabilities were approximately \$ 1.0 million and \$ 0.5 million on the Company's consolidated balance sheets at December 31, 2023 and January 1, 2023, respectively. See Note 8 for additional information.

Fair Value of Financial Instruments

Fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that is determined based on assumptions that market participants would use in pricing an asset or a liability. Assets and liabilities recorded at fair value are measured and classified in accordance with a three-tier fair value hierarchy based on the observability of the inputs available in the market used to measure fair value:

- Level 1 - Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2 - Inputs that are based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant inputs are observable in the market or can be derived from observable market data. Where applicable, these models project future cash flows and discount the future amounts to a present value using market-based observable inputs including interest rate curves, foreign exchange rates, and credit ratings.
- Level 3 - Unobservable inputs that are supported by little or no market activities.

The fair value hierarchy requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The determination of fair value involves the use of appropriate valuation methods and relevant inputs into valuation models. The carrying value of cash equivalents, accounts receivable, accounts payable, and accrued liabilities approximate their fair values due to their relatively short maturities.

The Company's financial assets consisting of an investment in non-marketable equity without a readily determinable fair value are measured under a measurement election alternative to the requirement to carry equity interests at fair value. In the Fiscal Year ended January 2, 2022, the Company recognized revenue from a contractual arrangement with an unaffiliated customer on the sale of eFPGA IP. The eFPGA IP included an eFPGA intellectual property license, know-how, and eFPGA-related professional services. Consideration in the contractual arrangement was comprised of cash and non-cash consideration. Non-cash consideration consisted of shares of common stock in the customer. The customer was, and continues to be, a privately-held company and its common stock is not publicly traded. The Company applied significant judgement to estimate the fair value of the shares as a portion of the total contractual consideration. The Company recognized a \$ 0.3 million non-marketable equity investment on its consolidated balance sheet and a corresponding amount in deferred revenue. This deferred revenue was recognized as revenue during the year ended January 1, 2023.

In determining the fair value of the investment at acquisition of the common stock, the Company applied the Black-Scholes Option Pricing model using a back-solve technique and applied significant judgment to quantify inputs used in the model, in accordance with the AICPA Accounting and Valuation Guide, *Valuation of Privately Held Company Equity Securities Issued as Compensation* (2013). The Company has neither significant influence nor control over the investee. Post-acquisition, the Company accounts for the non-marketable equity investment under a practical expedient under ASC 321, in which equity investments without a readily determinable fair value are measured to fair value at "cost minus impairment." Under the "cost minus impairment" method, when the non-marketable equity investment is determined to be impaired on the basis of a qualitative assessment, the carrying value of the non-marketable equity security is adjusted to fair value and is measured at cost, less any impairment. The Company reviews its non-marketable equity investment for impairment periodically. The carrying value of non-marketable equity securities is classified within Level 3 of the fair value hierarchy. Any losses, should they occur, from impairments of non-marketable equity investments are recorded in the statements of operations within interest income and other (expense) income, net. The non-marketable equity investment is classified as a non-current asset on the consolidated balance sheets. There was no impairment assessed as of December 31, 2023 and January 1, 2023. See Note 9 for additional information.

Cost of Revenues

The Company records costs of revenue associated with hardware product revenues, eFPGA IP revenue, and SaaS revenue. Hardware product costs include the cost of materials, contract manufacturing fees, shipping costs, and quality assurance. Hardware product costs also include indirect costs such as warranty, excess and obsolete inventory charges, general overhead costs, and depreciation and amortization of certain capitalized software. eFPGA IP and SaaS costs include costs related to services under contractual agreements over the term of their respective agreements. These costs are primarily comprised of employee salary and benefits and other employee-related costs to perform work on revenue-generating contracts with customers, software tool utilization costs, and contract engineering costs.

Hardware Product Warranty Costs

The Company warrants product hardware 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 the years ended December 31, 2023, January 1, 2023, and January 2, 2022.

Foreign Currency Transactions

All of the Company's revenue transactions and inputs to its cost of revenue are denominated in U.S. dollars. The Company conducts sales and marketing activities in various countries outside of the United States. The Company's foreign operations' monetary assets and liabilities 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. The Company's foreign operations' income and expenses are transacted in local foreign currency and translated to U.S. dollars using the average exchange rates in effect during the period. Gains and losses from the foreign currency transactions of the Company's foreign operations are recorded as interest income and other (expense) income, net in the consolidated statements of operations. The impact from foreign currencies was not significant for each of the Fiscal Years ended December 31, 2023, January 1, 2023, and January 2, 2022.

Operating expenses denominated in foreign currencies represented approximately 8 %, 12 %, and 14 % of total operating expenses for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively. The Company incurred a majority of such foreign currency expenses in India, the United Kingdom, China, Taiwan, and Japan in the Fiscal Years ended December 31, 2023, January 1, 2023, and January 2, 2022. The Company does not use 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.

Advertising

Advertising and promotion expenses are charged to "selling, general, and administrative" expense in the consolidated statements of operations as incurred. Advertising and promotion expenses were \$ 44 thousand, \$ 40 thousand, and \$ 47 thousand for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

Stock-Based Compensation

The Company grants stock-based compensation under its stock plan (the "Plan") to eligible employees and non-employee directors and grants stock-based compensation under an employee stock purchase plan ("ESPP") for all eligible employees. 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. The fair value of restricted stock awards, restricted stock units, and performance-based restricted stock units is based on the closing price of the Company's common stock on the date of grant.

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 expected term of awards is based primarily on the Company's historical experience with similar grants. The expected stock price volatility for both stock options and ESPP shares is based on the historic 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 appropriate for the expected term of stock awards under the Plan or the maturity appropriate for the term of the purchase period for the ESPP Plan. The dividend yield assumption is based on the Company's intent not to issue a dividend under its dividend policy. This fair value is expensed over the requisite service period of the award.

Stock-based compensation expense is measured at the grant date based on the fair value of the award less expected forfeitures, over the requisite service period, which is typically the vesting period. Expected forfeitures are an estimate based on the historical pre-vest cancellation experience and is applied to all share-based awards. Equity compensation awards that contain a service condition are expensed using the straight-line attribution method over the requisite service period. Performance-based awards are expected to vest based on the achievement of a performance goal and are expensed over the estimated vesting period, which is estimated by management. The Company regularly reviews the assumptions used to compute the fair value of its stock-based awards and it revises its assumptions as appropriate. See Notes 11 and 12 for additional information.

Interest Income

The Company's interest income is comprised of interest earned on its money market accounts and financing receivables. As of December 31, 2023, the Company had one note receivable related to the conversion of accounts receivable for a customer. Interest is accrued as earned and is reflected as an increase in the balance of the note receivable, as well as recognized as interest income on the Company's consolidated statement of operations. All accrued and unpaid interest will be due and payable to the Company on the maturity date of the note receivable. Refer to Note 9 for additional information.

Accounting for Income Taxes

As part of the process of preparing the Company's financial statements, the Company is required to estimate its income taxes in each of the jurisdictions in which it operates. This process involves estimating the Company's 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 the Company's balance sheets. The Company must then assess the likelihood that its deferred tax assets will be recovered from future taxable income. To the extent the Company believes that recovery is not likely, it must establish a valuation allowance. To the extent the Company establishes a valuation allowance or increases this allowance in a period, it must include an expense within the tax provision in the statements of operations.

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 (benefit from) income taxes. Accrued interest and penalties are included within the accrued liabilities in the consolidated balance sheets.

Comprehensive Income (Loss)

The net income (loss) in the consolidated statements of operations for each of the years ended December 31, 2023, January 1, 2023, and January 2, 2022 is the same as the consolidated comprehensive income (loss).

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 testing of its hardware products and for the supply of programming equipment. These services are typically provided by one supplier for each of the Company's hardware products. The Company generally purchases these single or limited source services through standard purchase orders. Since 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.

Business Combinations

When the Company acquires a business, it allocates the purchase price to the acquired tangible assets and assumed liabilities, including deferred revenue, liabilities associated with the fair value of contingent consideration, and acquired identifiable intangible assets with finite lives. Any residual purchase price is recorded as goodwill. The allocation of the purchase price requires the Company to make significant estimates in determining the fair values of these acquired assets and assumed liabilities, intangible assets with finite useful lives, and goodwill. These estimates are based on information obtained from management of the acquired companies, the Company's assessment of this information, and historical experience. These estimates can include, but are not limited to, the cash flows that an acquired business is expected to generate in the future, the cash flows that specific assets acquired with that business are expected to generate in the future, the appropriate weighted average cost of capital, and the cost savings expected to be derived from acquiring an asset. These estimates are inherently uncertain and unpredictable, and if different estimates were used, the purchase price for the acquisition could be allocated to the acquired assets and assumed liabilities differently from the allocation that the Company has made to the acquired assets and assumed liabilities. In addition, unanticipated events and circumstances may occur that may affect the accuracy or validity of such estimates, and if such events occur, the Company may be required to adjust the value allocated to acquired assets or assumed liabilities and may impact the useful life assigned to intangible assets with finite useful lives, which would impact amortization expense of intangible assets with finite useful lives and results of operations.

The Company recognizes assets acquired (including goodwill and identifiable intangible assets with finite useful lives) 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.

New Accounting Pronouncements Pending Adoption

In December 2023, the FASB issued ASU No. 2023-09, *Income Taxes (Topic 740) Improvements to Income Tax Disclosures* to enhance the transparency and decision usefulness of income tax disclosures by providing information to better assess how an entity's operations and related tax risks and tax planning and operational opportunities affect its tax rate and prospects for future cash flows. For public entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2024. Early adoption is permitted for annual financial statements that have not yet been issued or made available for issuance. The adoption of this ASU is not expected to have a material impact on the Company's consolidated financial statements or disclosures.

In November 2023, the FASB issued ASU No. 2023-07, *Segment Reporting (Topic 280) Improvements to Disclosures About Reportable Segments* to enhance disclosures about significant segment expenses, among other interim disclosure requirements. For public entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2023, and interim periods beginning after December 15, 2024. Early adoption is permitted. The adoption of this ASU is not expected to have a material impact on the Company's consolidated financial statements or disclosures.

In June 2022, the FASB issued ASU No. 2022-03, *Fair Value Measurement (Topic 820) Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions* to clarify the measurement of the fair value of an equity security subject to contractual restrictions that prohibit the sale of an equity security and requires disclosures related to these types of equity securities. For public business entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2023, and interim periods within those fiscal years. Early adoption is permitted for both interim and annual financial statements that have not yet been issued or made available for issuance. The adoption of this ASU is not expected to have a material impact on the Company's consolidated financial statements or disclosures.

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. The amendments in this Update are effective for public business entities that meet the definition of a Securities and Exchange Commission (SEC) filer, excluding entities eligible to be smaller reporting companies as defined by the SEC, for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. 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 adoption of ASU No. 2020-06 is not expected to have an impact on the Company's consolidated financial statements or related disclosures.

NOTE 3 — NET INCOME (LOSS) PER SHARE

Basic net income (loss) per share was computed by dividing net income (loss) available by the weighted average number of common shares outstanding during the period. Diluted net income (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 income (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 periods in which the Company has reported a net loss, diluted net loss per share attributable to common stockholders is the same as basic net loss per share attributable to common stockholders as dilutive common shares are not assumed to have been issued if their effect is anti-dilutive. For periods in which the Company has reported a net income, diluted net income per share attributable to common stockholders is different from basic net income per share attributable to common stockholders as dilutive common shares would increase the amount of shares outstanding reduced by the amounts of treasury shares repurchased from the proceeds at the average market price for the period.

Approximately 0.7 million, 0.8 million, and 0.7 million shares associated with equity awards outstanding and the estimated number of shares to be purchased under the current offering period of the ESPP 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 in the years ended December 31, 2023, January 1, 2023 and January 2, 2022, respectively. Warrants to purchase up to 0.4 million shares were issued in connection with the May 29, 2018 stock offering were also not included in the diluted loss per share calculation as they were also considered anti-dilutive due to the net loss the Company experienced in the years ended January 1, 2023 and January 2, 2022. These warrants expired unexercised on May 29, 2023.

NOTE 4 — BALANCE SHEET COMPONENTS

	December 31, 2023	January 1, 2023
	(in thousands)	
Inventories:		
Work-in-process	\$ 1,602	\$ 1,826
Finished goods	427	667
	<u>\$ 2,029</u>	<u>\$ 2,493</u>
Prepaid expenses and other current assets:		
Prepaid taxes	\$ 498	\$ 510
Deferred charges	290	295
Other prepaid taxes, royalties, and other prepaid expenses	629	500
Other	144	265
	<u>\$ 1,561</u>	<u>\$ 1,570</u>
Property and equipment:		
Equipment	\$ 10,503	\$ 10,133
Tooling	9,248	1,549
Software	1,803	1,803
Furniture and fixtures	65	65
Leasehold improvements	580	466
	22,199	14,016
Accumulated depreciation and amortization	(13,251)	(12,618)
	<u>\$ 8,948</u>	<u>\$ 1,398</u>
Capitalized internal-use software:		
Capitalized software held for internal use	\$ 3,491	\$ 2,370
Accumulated amortization	(1,422)	(856)
	<u>\$ 2,069</u>	<u>\$ 1,514</u>
Accrued liabilities:		
Accrued compensation	\$ 1,910	\$ 865
Accrued employee benefits	57	40
Accrued payroll tax	197	57
Other	509	547
	<u>\$ 2,673</u>	<u>\$ 1,509</u>

The Company capitalized \$ 7.09 million in pre-production design and development costs as tooling to be utilized under its long-term professional services contracts for the fiscal year ended December 31, 2023. The capitalized assets recognized in the period are owned by the Company. No pre-production design and development costs were capitalized in the fiscal year ended January 1, 2023.

The Company recorded depreciation and amortization expense of \$ 1.8 million, \$ 1.1 million, and \$ 1 million for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively. No interest was capitalized for any period presented.

Depreciation and amortization expense included approximately \$ 0.6 million, \$ 0.4 million, and \$ 0.3 million in amortization expense of capitalized internal-use software for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

Accounts receivable, net of allowances for doubtful accounts of \$ 0.1 million, was \$ 1.0 million as of January 2, 2022.

NOTE 5— PROPERTY, PLANT, AND EQUIPMENT

Property, plant, and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation begins at the time the asset is placed in service. Maintenance and repairs are charged to operations as incurred. Depreciation is computed using the straight-line method over the following estimated useful lives of the assets:

	Useful Lives
Equipment	1 - 10 years
Tooling	7 years
Software	1 - 7 years
Furniture and fixtures	5 - 7 years
Leasehold improvements	3 - 5 years

The amortization period of leasehold improvements made at the inception of the lease is directly related to the initial lease term, while the amortization period for subsequent leasehold improvements is directly related to the initial lease term adjusted for extensions.

NOTE 6— INTANGIBLE ASSETS

The following table provides the details of the carrying value of intangible assets recorded from the 2019 acquisition of SensiML at December 31, 2023 (in thousands):

	December 31, 2023			
	Remaining Useful Life	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Developed technology	5	\$ 959	\$ (480)	\$ 479
Customer relationships	—	81	(81)	—
Trade names and trademarks	5	116	(58)	58
Total acquired identifiable intangible assets		\$ 1,156	\$ (619)	\$ 537

The following table provides the details of the carrying value of intangible assets recorded from the 2019 acquisition of SensiML at January 1, 2023 (in thousands):

	January 1, 2023			
	Remaining Useful Life	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Developed technology	6	\$ 959	\$ (383)	\$ 576
Customer relationships	—	81	(81)	—
Trade names and trademarks	6	116	(47)	69
Total acquired identifiable intangible assets		\$ 1,156	\$ (511)	\$ 645

The following table provides the details of future annual amortization of intangible assets, based upon the current useful lives at December 31, 2023 (in thousands):

	Amount
Annual Fiscal Years	
2024	\$ 107
2025	107
2026	107
2027	107
2028	109
Total	<u>\$ 537</u>

NOTE 7 — DEBT OBLIGATIONS
Revolving Line of Credit

On December 21, 2018, the Company entered into a loan agreement, the QuickLogic Corporation Heritage Bank of Commerce Amended and Restated Loan and Security Agreement (as amended, the "Loan Agreement") with Heritage Bank which among other things, provided a revolving line of credit facility ("Revolving Facility") allowing the Company to draw advances up to \$ 15.0 million. The Revolving Facility, as amended, includes a number of customary and restrictive financial covenants including maintaining certain minimum cash levels with the lender. On December 8, 2023, the Company entered into the Seventh Amendment to the Loan Agreement, which increased the line of credit to \$ 20.0 million, extended the maturity date from December 31, 2024 to December 31, 2025, and increased the annual facility fee to \$ 60 thousand from \$ 45 thousand, payable each December 31st. Advances under the Revolving Facility bear a variable annual interest rate equal to one half of one percentage point (0.50 %) above the prime rate. On December 31, 2023, the Company had a \$ 20.0 million outstanding balance on the Revolving Facility with an interest rate of 9.00 %. On January 1, 2023, the Company had a \$ 15.0 million outstanding balance on the Revolving Facility with an interest rate of 8.00 %.

The Company was in compliance with all loan covenants under the Loan Agreement, as of the end of the current reporting period.

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 Loan Agreement.

Paycheck 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 Paycheck Protection Program under the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") as implemented by the U.S. Small Business Administration and enacted on March 27, 2020.

The PPP Loan was evidenced by a promissory note ("Note") dated May 6, 2020, maturing 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. Principal and interest were allowed to 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 in the year ended January 2, 2022.

Financing Arrangements

The Company previously classified certain licensed tooling software as leased assets and liabilities under ROU assets and financing lease liabilities. Upon further analysis, the Company determined it is more appropriate to classify these amounts as financing arrangements. The amount of fixed assets, net purchased through financing arrangements on the balance sheet were \$ 1.4 million and \$ 0.9 million as of December 31, 2023 and January 1, 2023, respectively. The corresponding note payable amount for these financing arrangements was \$ 1.4 million and \$ 0.9 million as of December 31, 2023 and January 1, 2023, respectively. Payments related to financing arrangements were \$ 0.7 million, \$ 0.5 million, and \$ 0.4 million for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively. The Company's outstanding financing arrangements as of December 31, 2023 have remaining terms of 0.91 years to 2.25 years, with a weighted average remaining term of 1.81 years. Stated interest rates for its financing arrangements outstanding as of December 31, 2023 range from 3.75 % to 9.89 %, with a weighted average interest rate of 8.34 %. The Company's outstanding financing arrangements as of January 1, 2023 had remaining terms of 1.67 years to 2.01 years, with a weighted average remaining term of 1.91 years. Stated interest rates for its financing arrangements outstanding as of January 1, 2023 ranged from 3.75 % to 6.75 %, with a weighted average interest rate of 5.95 %.

Amounts due to be paid in Fiscal Years 2024 and 2025 are \$ 1.0 million and \$ 0.5 million, respectively, less amounts representing interest of \$ 0.1 million results in the total notes payable amount of \$ 1.4 million.

NOTE 8 — LEASES

The Company's principal research and development and corporate facilities are leased office buildings located in the United States. These lease facilities are classified as operating leases. Operating leases generally have lease terms of 1 to 5 years. The Company's corporate facility is located at 2220 Lundy Avenue, San Jose, California, 95131, where the Company occupies approximately 24,164 square feet of space. The original five-year lease was entered into in February 2019 and on October 24, 2023, was extended to April 14, 2027 under similar terms. The Company's SensiML subsidiary in Beaverton, Oregon occupies approximately 925 square feet of space. The original four-year lease was entered into in April 2019 and on April 1, 2023, was extended to March 31, 2025 under similar terms. The Company maintains sales offices out of which it conducts sales and marketing activities in various countries outside of the United States. The sales offices are rented under short-term leases. Total rent expense was approximately \$ 0.4 million for each of the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

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

	December 31, 2023	January 1, 2023
Operating lease costs:		
Fixed	\$ 394	\$ 409
Short term	18	11
Total	<u>\$ 412</u>	<u>\$ 420</u>
Right-of-use assets obtained in exchange for obligations lease:		
Operating leases	\$ 865	\$ —
Total	<u>\$ 865</u>	<u>\$ —</u>

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

	December 31, 2023	January 1, 2023
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows used for operating leases	\$ 421	\$ 409
Total	<u>\$ 421</u>	<u>\$ 409</u>

Non-cash ROU assets related to operating leases included in the operating cash flows for the fiscal year ended December 31, 2023 and January 1, 2023 were \$ 348 thousand and \$ 345 thousand, respectively.

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

	December 31, 2023	January 1, 2023
Right-of-use assets:		
Operating leases	\$ 981	\$ 464
Total	<u>\$ 981</u>	<u>\$ 464</u>
Lease liabilities:		
Operating leases	\$ 983	\$ 507
Total	<u>\$ 983</u>	<u>\$ 507</u>

The following table provides the details of future lease payments for operating leases as of December 31, 2023 and (in thousands):

Annual Fiscal Years	Operating
2024	\$ 378
2025	340
2026	351
2027	64
Total lease payments	<u>1,133</u>
Less: Interest	150
Present value of lease liabilities	<u>\$ 983</u>

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

	December 31, 2023
ROU assets:	
Weighted-average remaining lease term (years)	
Operating leases	3.25
Weighted-average discount rates:	
Operating leases	6.00%

NOTE 9 — FAIR VALUE MEASUREMENTS

The Company's cash, cash equivalents and restricted cash balances were \$ 24.6 million and \$ 19.2 million, including amounts in money market funds, as of December 31, 2023 and January 1, 2023, respectively. The money market funds are collateral for the company's credit card debt and had a balance of \$ 0.1 million at December 31, 2023 and January 1, 2023. Interest in these funds is earned at a 0.01 % annual percentage rate ("APR"). Due to the short-term nature of the money market funds, the Company believes that carrying value approximates fair value.

On April 28, 2023, the Company converted accounts receivable for a customer in the amount of approximately \$ 1.16 million to notes receivable (the "Note"). At the time, the Note bore an interest rate of 3.0 % compounded monthly. On June 28, 2023, the Company cancelled the original note and entered into a revised promissory note with the customer, where the interest rate changed to 4.69 % compounded monthly, or a 4.8 % effective annual interest rate, accruing from the date of the prior note. If not prepaid prior to the Note maturity date of June 28, 2024, the principal and all accrued and unpaid interest will be due and payable to the Company. If an event of default occurs, the interest rate will increase to 10.0 %. All other terms of the note remained the same. The Company evaluated the note receivable under the current expected credit loss ("CECL") model, which requires the measurement of all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. The CECL model does not specify a threshold for the recognition of an impairment allowance. The Company utilized the probability-of-default method to determine the current expected credit loss for the note receivable. Using this method, the Company measured the current expected credit loss associated with the note receivable to be de minimis as of December 31, 2023.

In the third quarter of 2021, in connection with a revenue contract with the same 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, which consisted of a certain amount of the customer's equity. The Company considered the non-cash consideration to be an investment in the customer. The full transaction price was the amount of consideration which the Company received under the contract in exchange for transferring the promised goods and services to the customer. Since the non-cash consideration was shares of common stock that were not publicly traded, the fair value was 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 believed that its valuation method for the non-public equity under this arrangement fell under Level 3 in the fair value hierarchy because the value method relied on unobservable market inputs. The initial fair value of the non-cash consideration is listed below:

	Fair Value at Valuation Date Using:			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Non-marketable equity investment	\$ 300	\$ —	\$ —	\$ 300

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 below were utilized:

- 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 customer's 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 through January 1, 2023, there were no observable indicators of impairment for the non-marketable equity investment. During Fiscal 2023, there were no observable indicators of impairment for the non-marketable equity investment. There was no change to the carrying value of the non-marketable equity investment of \$ 0.3 million as of December 31, 2023 and January 1, 2023.

NOTE 10 — INCOME TAXES

The components of loss before provision of income taxes and the components for the provision for income taxes are as follows (in thousands):

	Fiscal Years		
	2023	2022	2021
Income (loss) before income taxes:			
U.S.	\$ (225)	\$ (4,116)	\$ (6,461)
Foreign	(36)	(53)	(36)
Income (loss) before income taxes	<u>\$ (261)</u>	<u>\$ (4,169)</u>	<u>\$ (6,497)</u>
Provision for income taxes:			
Current:			
State	\$ 9	\$ 3	\$ 3
Foreign	(6)	36	22
Subtotal	<u>3</u>	<u>39</u>	<u>25</u>
Deferred:			
Foreign	(1)	59	94
Subtotal	<u>(1)</u>	<u>59</u>	<u>94</u>
Provision for income taxes	<u>\$ 2</u>	<u>\$ 98</u>	<u>\$ 119</u>

The difference between income taxes computed at the statutory federal income tax rate and the provision for income taxes is attributable to the following (in thousands):

	Fiscal Years		
	2023	2022	2021
Income tax benefit at statutory rate	\$ (55)	\$ (876)	\$ (1,364)
State taxes	9	3	3
Foreign taxes	—	106	124
Stock compensation and other permanent differences	(740)	21	(155)
PPP loan forgiveness	—	—	(250)
R&D tax credits	(480)	(318)	(230)
Expired tax attributes	1,290	3,563	3,303
Future benefit of deferred tax assets not recognized	(22)	(2,401)	(1,312)
Provision for income taxes	<u>\$ 2</u>	<u>\$ 98</u>	<u>\$ 119</u>

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 December 31, 2023. 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.

Significant components of the Company's deferred tax balances are as follows (in thousands):

	December 31, 2023	January 1, 2023
Deferred tax assets:		
Net operating losses	\$ 42,220	\$ 43,110
Accruals and reserves	1,569	1,284
Credits carryforward	6,730	6,004
Depreciation and amortization	5,841	6,488
Stock-based compensation	447	1
Operating lease liability	216	327
Gross deferred tax assets	<u>57,023</u>	<u>57,214</u>
Deferred tax liabilities:		
Right-of-use asset	(215)	(328)
Withholding tax on future distribution	(125)	(125)
Gross deferred tax liabilities	<u>(340)</u>	<u>(453)</u>
Net deferred tax assets	56,683	56,761
Valuation allowance	(56,783)	(56,862)
Total deferred tax liability	<u>\$ (100)</u>	<u>\$ (101)</u>

Beginning January 1, 2022, the Tax Cuts and Jobs Act (the "Tax Act") eliminated the option to deduct research and development expenditures in the current year and requires taxpayers to capitalize such expenses pursuant to Internal Revenue Code ("IRC") Section 174. The capitalized expenses are amortized over a 5-year period for domestic expenses and a 15-year period for foreign expenses. As a result of this provision of the Tax Act, the Company capitalized \$ 8.5 million of research expenses in fiscal year 2023.

As of December 31, 2023, the Company had federal and state income tax net operating loss ("NOL") carryforwards of approximately \$ 169.5 million and \$ 94.2 million, respectively. Approximately \$ 106.3 million in federal NOLs generated before January 1, 2018 expire beginning in 2024 through 2037. Federal NOLs of \$ 63.2 million generated in years after January 1, 2018 can be carried forward indefinitely. State NOLs will expire beginning in fiscal year 2028 through 2043. The Company had research credit carryforwards of approximately \$ 4.6 million for federal and \$ 5.5 million for state income tax purposes as of December 31, 2023. If not utilized, the federal carryforwards will expire beginning in 2026 through 2043. The California research credit carryforward can be carried forward indefinitely.

Due to the Company's history of losses, it believes 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 as of December 31, 2023. Accordingly, the Company established a valuation allowance of \$ 56.8 million, tax-effected, as of the Fiscal Year ended December 31, 2023 due to uncertainties related to its ability to utilize its U.S. deferred tax assets before they expire.

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(a) ("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 performed a Section 382 Study related to ownership changes in fiscal year 2023, covering the period starting January 1, 2005 through December 31, 2023. Per the Section 382 Study, there were no Section 382 ownership changes during this period. As a result, the future utilization of the Company's NOL and R&D credit carryovers generated since 2005 are not subject to any limitations, assuming the Company does not experience an ownership change in the future.

Foreign withholding taxes associated with the repatriation of earnings of foreign subsidiaries were not provided for on the undistributed earnings of certain foreign subsidiaries as of the end of fiscal 2023. 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. In previous years, the Company recorded a deferred tax liability of approximately \$ 0.1 million on the undistributed earnings of non-U.S. subsidiaries. During fiscal 2023, there were no changes to this balance, and at December 31, 2023, the balance for this deferred tax liability was approximately \$ 0.1 million. The foreign withholding taxes are not expected to have a material impact on the Company's financial position and results of operation.

Uncertain Tax Positions

Changes in gross unrecognized benefits are as follows (in thousands):

	Fiscal Years		
	2023	2022	2021
Beginning balance of unrecognized tax benefits	\$ 2,249	\$ 2,118	\$ 2,175
Additions (subtractions) for tax positions related to the prior year	2	—	(7)
Additions for tax positions related to the current year	262	185	128
Lapse of statutes of limitations	—	(54)	(178)
Ending balance of unrecognized tax benefits	<u>\$ 2,513</u>	<u>\$ 2,249</u>	<u>\$ 2,118</u>

Out of \$ 2.5 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 as of December 31, 2023, January 1, 2023, and January 2, 2022.

The Company is not currently under tax examination in the U.S. and the Company's historical net operating loss and credit carryforwards may 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 2004 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 December 31, 2023, 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 March 21, 2023, the Company entered into common stock purchase agreements with certain investors for the sale of an aggregate of 450 thousand shares of its common stock, in a registered direct offering pursuant to an effective shelf registration statement on Form S-3, resulting in net cash proceeds of approximately \$ 2.3 million. Issuance costs related to the offering were immaterial. The purchase price for each share of common stock in the Share Placement was \$ 5.14 .

On September 14, 2022 and February 9, 2022, the Company entered into common stock purchase agreements with certain investors for the sale of an aggregate of 487 thousand and 310 thousand shares of common stock, respectively, in registered direct offering direct offerings pursuant to an effective shelf registration statement on Form S-3, resulting in net cash proceeds of approximately \$ 3.2 million and \$ 1.5 million, respectively. Issuance costs related to the September 14, 2022 and the February 9, 2022 offerings were immaterial. The purchase price for each share of common stock in the September 14, 2022 and February 9, 2022 placements were \$ 6.57 and \$ 4.78 , respectively.

On August 17, 2022, the Company filed a new Registration Statement on Form S-3 with the SEC to replace a previously expired Registration on Form S-3, under which the Company may sell, from time-to-time common stock, preferred stock, depositary shares, warrants, debt securities, and units, individually or as units comprised of one or more of the other securities or a combination thereof. The Company's registration statement became effective on August 26, 2022.

On September 22, 2021, the Company entered into a share subscription agreement for the sale of 125 thousand shares of its common stock. On September 30, 2021, the Company entered into a common stock purchase agreement for the sale of 74 thousand shares of its common stock, in a registered direct offering pursuant to an effective shelf registration statement on Form S-3. The net proceeds to the Company in aggregate, after deducting equity issuance costs of approximately \$ 45 thousand was approximately \$ 1.0 million. The purchase price for each share of common stock in the Share Placements was \$ 5.43 .

At January 2, 2023, warrants exercisable for 386 thousand shares of common stock at an exercise price of \$ 19.32 per share remained outstanding. These warrants were issued on May 29, 2018 and were exercisable any time for a period of 60 months. The warrants expired unexercised on May 29, 2023.

NOTE 12 — EMPLOYEE STOCK PLANS

2009 Stock Plan

On April 24, 2019, the QuickLogic Corporation 2009 Stock Plan ("2009 Stock Plan") was replaced by the 2019 Stock Plan and the remaining balance of available shares under the 2009 Stock Plan were cancelled.

2019 Stock Plan

On April 24, 2019, the Company's Board of Directors and shareholders approved the QuickLogic Corporation 2019 Stock Plan ("2019 Stock Plan"). The 2019 Stock Plan was extended ten years through March 15, 2028. Under the 2019 Stock Plan, 357 thousand shares of common stock were available for grants, plus any shares subject to any outstanding options or other awards granted under the 2009 Stock 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. The Company's Board of Directors approved and on May 10, 2022, stockholders subsequently ratified an increase in the total number of shares available for future awards under the 2019 Stock Plan. The increase in the total number of shares available for future awards consisted of the sum of (1) 900 thousand, (2) 522 thousand shares which were available for future awards under the plan immediately before such approval, and (3) any shares subject to outstanding awards under the 2019 Stock Plan or the 2009 Stock Plan, that are terminated, canceled, surrendered, or forfeited as of May 10, 2022. On May 19, 2022, the Company filed a Registration Statement on Form S-8 with the Securities and Exchange Commission to register an additional nine hundred thousand shares of its common stock that may be issued under the Company's 2019 Stock Plan.

As of December 31, 2023, approximately 595 thousand shares of the Company's common stock were reserved for issuance under the 2019 Stock Plan.

Options typically vest at a rate of 25 % 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.

2009 ESPP Stock Plan

The QuickLogic Corporation 2009 Employee Stock Purchase Plan ("2009 ESPP Stock Plan"), as amended on March 6, 2019, was adopted in March 2009. The 2009 ESPP Stock Plan extends ten years until March 5, 2029 and 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 Stock Plan 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 beginning or the end of an offering period.

As of December 31, 2023, approximately 161 thousand shares of the Company's common stock were reserved for issuance under the 2009 ESPP Stock Plan.

NOTE 13 — STOCK-BASED COMPENSATION

The Company provides stock-based incentive compensation 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 awards, restricted stock units ("RSU"), and performance-based restricted stock units ("PRSU") and are based on the closing price of the Company's common stock on the date of grant. 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 recognized in the Company's consolidated statements of operations for the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively is as follows (in thousands):

	Fiscal Years		
	2023	2022	2021
Stock-based compensation expense included in:			
Cost of revenue	\$ 328	\$ 272	\$ 282
Research and development	595	652	843
Selling, general and administrative	1,599	1,111	1,401
Total costs and expenses	<u>\$ 2,522</u>	<u>\$ 2,035</u>	<u>\$ 2,526</u>

	Fiscal Years		
	2023	2022	2021
Stock-based compensation expense by type of award:			
ESPP	\$ 127.00	\$ 70.00	\$ 110.00
RSU and PRSU	2,395	1,965	2,416
Total costs and expenses	<u>\$ 2,522</u>	<u>\$ 2,035</u>	<u>\$ 2,526</u>

The Company capitalized stock-based compensation amounts to capitalized internal-use software and tooling, net of \$ 248 thousand for the year ended December 31, 2023. No stock-based compensation was capitalized or included in inventories for the years ended January 1, 2023 and January 2, 2022.

Stock-Based Compensation Award Activity

A roll forward of shares available for grant under the 2019 Plan (in thousands) is as follows:

	Shares Available for Grant
Balance at January 2, 2022	594
Authorized	900
RSUs granted	(584)
Options forfeited or expired	18
RSUs forfeited	<u>32</u>
Balance at January 1, 2023	960
Options forfeited or expired	15
RSUs granted	(400)
RSUs forfeited	<u>20</u>
Balance at December 31, 2023	<u>595</u>

No stock options were granted during any of the periods presented.

Stock Options

A roll forward of stock options under the 2019 Plan is as follows:

	Number of Shares (in thousands)	Weighted Average Exercise Price	Weighted Average Remaining Term (in years)	Aggregate Intrinsic Value (in thousands)
Balance outstanding at December 29, 2019	186	\$ 32.09		
Forfeited or expired	(65)	38.83		
Balance outstanding at January 3, 2021	121	28.46		
Forfeited or expired	(28)	31.68		
Balance outstanding at January 2, 2022	93	27.49		
Forfeited or expired	(18)	39.72		
Balance outstanding at January 1, 2023	75	24.50		
Forfeited or expired	(15)	45.22		
Outstanding, exercisable, and vested at December 31, 2023	<u>60</u>	\$ 19.45	2.27	\$ 86

The intrinsic value for the stock options, based on the Company's closing stock price of \$ 13.86 per share at December 29, 2023, the last trading day of the Company's current reporting period, was \$ 0 which would have been received by the option holders had all option holders exercised their options as of that date.

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No options were exercised or granted during the years ended December 31, 2023, January 1, 2023, and January 2, 2022. As of December 31, 2023, there were no unvested stock options.

Restricted Stock Units

The Company grants RSUs 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 date vested. The Company withholds shares in settlement of employee tax withholding obligations on the vesting of restricted stock units.

As of December 31, 2023, there was approximately \$ 3.1 million in unrecognized stock-based compensation expense related to RSUs, inclusive of unrecognized stock-based compensation related to PRSUs of \$ 43 thousand. The remaining unrecognized stock-based compensation expense as of December 31, 2023 is expected to be recorded over a weighted average period of 1.37 years.

A roll forward summarizing RSU activity and related weighted average grant date fair values is as follows:

	RSUs Outstanding	
	Number of Shares (in thousands)	Weighted Average Grant Date Fair Value
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
Granted	584	6.11
Vested	(490)	5.56
Forfeited	(32)	5.35
Nonvested at January 1, 2023	630	6.05
Granted	400	8.12
Vested	(421)	6.15
Forfeited	(20)	6.92
Nonvested at December 31, 2023	589	\$ 7.35

2009 ESPP Stock Plan

The Company issued 45 thousand shares of common stock at an average price of \$ 4.48 per share, 52 thousand shares of common stock at an average price of \$ 4.82 per share, and 84 thousand shares of common stock at an average price of \$ 3.14 per share to employees in the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

The weighted average grant date fair value and the weight-average assumptions used to estimate the fair value of ESPP option rights granted is as follows:

	Fiscal Years		
	2023	2022	2021
Expected life (months)	6.0	6.0	6.0
Risk-free interest rate	5.30%	3.04%	0.05%
Volatility	50%	57%	74%
Dividend yield	—	—	—
Weighted average fair value of ESPP options granted	\$ 2.14	\$ 2.04	\$ 2.18

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		
	2023	2022	2021
New products	\$ 18,211	\$ 11,675	\$ 7,761
Mature products	2,987	4,505	4,924
Total revenue	\$ 21,198	\$ 16,180	\$ 12,685

New products revenue consists of revenues from the sale of hardware 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 nanometer.

The following is a breakdown of new products revenue (in thousands):

	Fiscal Years		
	2023	2022	2021
Hardware products	\$ 1,230	\$ 3,757	\$ 4,903
eFPGA IP	16,839	7,545	2,674
SaaS & Other	142	373	184
Total new products revenue	<u>\$ 18,211</u>	<u>\$ 11,675</u>	<u>\$ 7,761</u>

eFPGA IP revenue is comprised primarily of eFPGA intellectual property license revenue, eFPGA-related professional services revenue, and eFPGA-related support and maintenance revenue. eFPGA-IP revenue related to professional services was approximately \$ 16.6 million, \$ 7.4 million, and \$ 1.5 million in the Fiscal Years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

Contract assets were approximately \$ 3.6 million, \$ 2.0 million, and \$ 0.3 million at December 31, 2023, January 1, 2023, and January 2, 2022, respectively and were included under current assets on the Company's consolidated balance sheets. Contract liabilities of \$ 1.1 million, \$ 0.3 million, and \$ 0.5 million were included in deferred revenue on the Company's consolidated balance sheets at December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

During the year ended January 1, 2023, the Company entered into a multiple-year agreement with a customer to provide professional services over multiple phases of which each phase has to be separately approved prior to commencement of work. Other contractual terms include a termination for convenience clause including the enforceable right to payment for performance completed to date.

The Company assessed the agreement under ASC 606 noting the following judgments, estimates, and conclusions:

- Each funded phase comprised a separate contract.
- There were monthly performance obligations associated with stated milestones.
- The application of the output method resulted in the allocation of the transaction price for the contract on a straight-line basis for the stated milestones.
- Further, revenue for the contract is recognized at a point in time when control of the asset is transferred to and accepted by the customer.

Associated with this agreement, the Company recognized professional services revenue amounting to \$ 14.8 million and \$ 3.3 million for the fiscal years ended December 31, 2023 and January 1, 2023, respectively.

The Company derives revenue from sales to customers located in North America, Europe and Asia Pacific. North America includes revenue from the United States. Revenue from the United States was \$ 18.6 million or 88 % of total revenue, \$ 10.6 million or 67 % of total revenue, and \$ 6.9 million or 54 % of total revenue in the years ended December 31, 2023, January 1, 2023, and January 2, 2022, respectively.

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

	Fiscal Years		
	2023	2022	2021
Asia Pacific	\$ 1,965	\$ 3,558	\$ 3,352
North America	18,644	10,912	6,885
Europe	589	1,710	2,448
Total revenue	<u>\$ 21,198</u>	<u>\$ 16,180</u>	<u>\$ 12,685</u>

The following distributors and customers accounted for 10 % or more of the Company's revenue for the periods presented. Distributor amounts represent revenue from the Company's goods and services sold to a distributor. Customer amounts represent revenues from both distributor and from the Company to an end customer. As such, revenue to a distributor may also include information related to customers.

	Fiscal Years		
	2023	2022	2021
Distributor "A"	*	15%	15%
Distributor "B"	*	12%	22%
Distributor "C"	*	*	11%
Customer "A"	70%	20%	*
Customer "C"	*	16%	16%
Customer "F"	*	12%	14%
Customer "H"	*	*	10%

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

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

	December 31, 2023	January 1, 2023
Distributor "A"	*	14%
Customer "A"	86%	*
Customer "C"	*	22%
Customer "F"	*	44%
		%
		%

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

Approximately 0.4 % and 1.2 % of the Company's long-lived assets, including property and equipment and other assets, were located outside the United States as of December 31, 2023 and January 1, 2023, respectively.

NOTE 15 — COMMITMENTS AND CONTINGENCIES

Commitments

The Company's principal contractual commitments include purchase obligations, re-payments of draw downs from the revolving line of credit, and payments under operating leases and financing arrangements. Purchase obligations are largely comprised of open purchase order commitments to suppliers and to subcontractors under professional services agreements. The Company's risk associated with the purchase obligations under professional services agreements is limited to the termination liability provisions within those contracts, and as such, it does not believe they represent a material liquidity risk to the company.

Certain wafer manufacturers require the Company to forecast wafer starts several months in advance. The Company is committed to take delivery of and to pay for a portion of the forecasted wafer volume. The Company did not have any non-cancellable purchase commitments with various wafer foundries as of December 31, 2023.

Purchase Obligations

Purchase obligations represent contractual agreements to purchase goods or services entered into in the ordinary course of business. Purchase obligations are legally binding and amongst other things specify a minimum or a range of quantities, pricing and approximate timing of the transaction. Purchase obligations include amounts that are recorded on the Company's consolidated balance sheets, as well as amounts that are not recorded on the Company's consolidated balance sheets. The Company had \$ 11.1 million of recorded and unrecorded purchase obligations due within the next twelve months as of December 31, 2023. The Company expects this commitment to be fulfilled over the next twelve months of Fiscal 2024.

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

On March 13, 2024, QuickLogic Corporation (the "Company") entered into Common Stock Purchase Agreements with certain institutional investors and their affiliated entities for the sale of an aggregate of 222,500 shares of common stock, par value \$ 0.001 (the "Common Stock"), in a registered direct offering. These share placements resulted in gross proceeds of approximately \$ 3.56 million (the "Financing"). The purchase price for each share of Common Stock in the Financing was \$ 16.00 . The per share purchase price reflects a zero discount based upon the 10-day volume weighted average price on the day pricing was agreed. Issuance costs related to the offering were immaterial.

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 Officer, 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 December 31, 2023 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 December 31, 2023 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

Insider Trading Arrangements

As of December 31, 2023, none of our directors or officers (as defined in Rule 16a-1(f) of the Exchange Act) adopted or terminated a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement" (as those terms are defined in Item 408 of Regulation S-K), except as follows:

Timothy Saxe, Senior Vice President of Engineering and Chief Technology Officer, adopted a Rule 10b5-1 trading arrangement on November 21, 2023. Under this arrangement, approximately 53,000 shares of our common stock may be sold, subject to certain conditions, before the plan expires on February 28, 2025.

The above arrangement is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) of the Exchange Act.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

The information required by Part III is incorporated by reference from the definitive Proxy Statement regarding our 2024 Annual Meeting of Stockholders, which Proxy Statement is anticipated to be filed with the Securities and Exchange Commission within 120 days after the end of the Fiscal Year covered by this Annual 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 is hereby incorporated by reference from our definitive Proxy Statement relating to the 2024 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 Annual 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 2024 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 Annual 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 2024 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 Annual 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 2024 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 Annual 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 2024 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 Annual 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 Annual Report.

2. Financial Statement Schedules

Following is the Company's valuation and qualifying accounts (in thousands):

Description:	Balance at Beginning of Period	Charged (Credited) to Costs and Expenses (in thousands)	Deductions (Recovery)	Balance at End of Period
Year ended December 31, 2023				
Allowances:				
— trade receivables	\$ 18	\$ 42	\$ (26)	\$ 34
— deferred taxes	56,862	—	(578) (1)	56,284
	<u>\$ 56,880</u>	<u>\$ 42</u>	<u>\$ (604)</u>	<u>\$ 56,318</u>
Year ended January 1, 2023				
Allowances:				
— trade receivables	\$ 62	\$ 18	\$ (62)	\$ 18
— deferred taxes	60,353	—	(3,491) (1)	56,862
	<u>\$ 60,415</u>	<u>\$ 18</u>	<u>\$ (3,553)</u>	<u>\$ 56,880</u>
Year ended January 2, 2022				
Allowances:				
— trade receivables	\$ 32	\$ 30	\$ —	\$ 62
— deferred taxes	60,486	—	(133) (1)	60,353
	<u>\$ 60,518</u>	<u>\$ 30</u>	<u>\$ (133)</u>	<u>\$ 60,415</u>

(1) Activity represents the (release) increase of a valuation allowance.

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

(b) *Exhibits*

The exhibits listed under Item 15(b) hereof are filed with or incorporated by reference as part of this Annual 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
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-K	4.3	3/13/2020
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-K	10.2	03/22/2022

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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	10.8	04/22/2020
10.9*	QuickLogic Corporation 2019 Stock Plan, as amended May 12, 2021	8-K	10.7	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-K	10.14	03/22/2022
10.15*	Form of Notice of Grant of Restricted Stock Unit and Restricted Stock Unit Agreement under 2019 Stock Plan	10-K	10.15	03/22/2022
10.16*	Form of Notice of Grant of Stock Rights and Restricted Stock Purchase Agreement Under the 2019 Stock Plan	10-K	10.16	03/22/2022
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
10.22	Fourth Amendment to Amended and Restated Loan and Security Agreement, dated as of August 16, 2021	10-Q	10.3	11/17/2021
10.23	Fifth Amendment to Amended and Restated Loan and Security Agreement, dated as of August 16, 2021	10-Q	10.1	05/18/2022
10.24	Sixth Amendment to Amended and Restated Loan and Security Agreement, dated as of August 16, 2021	10-K	10.24	03/28/2023

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10.25	Seventh Amendment to Amended and Restated Loan and Security Agreement, dated as of December 8, 2023	8-K	10.1	12/12/2023
10.26	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
10.27	Form of Share Agreement, dated September 22, 2021, between QuickLogic Corporation and the purchases named therein	8-K	10.2	09/30/2021
10.28	Form of Common Stock Purchase Agreement, dated February 9, 2022	8-K	10.1	02/09/2022
10.29	Form of Common Stock Purchase Agreement, dated September 14, 2022	8-K	10.1	09/20/2022
10.30	Form of Common Stock Purchase Agreement, dated March 13, 2024	8-K	10.1	03/18/2024
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**	Certification of Brian C. Faith, Chief Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			
31.2**	Certification of Elias Nader, Chief Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			
32.1***	Certification of Brian C. Faith, Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			
32.2***	Certification of Elias Nader, Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			
97**	Clawback Policy - Policy for the Recovery of Erroneously Awarded Compensation, effective as of November 30, 2023			
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 December 31, 2023 has been formatted in Inline XBRL and contained in Exhibit 101.			

* Indicates management contract or compensatory plan or arrangement.

** Filed herewith.

*** Furnished herewith.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized on this March 26, 2024.

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 26, 2024
/s/ ELIAS NADER Elias Nader	Chief Financial Officer and SVP, Finance (Principal Financial Officer)	March 26, 2024
/s/ TIMOTHY SAXE Timothy Saxe	Senior Vice President Engineering and Chief Technology Officer	March 26, 2024
/s/ MICHAEL R. FARESE Michael R. Farese	Chairman of the Board	March 26, 2024
/s/ JOYCE KIM Joyce Kim	Director	March 26, 2024
/s/ RADHIKA KRISHNAN Radhika Krishnan	Director	March 26, 2024
/s/ ANDREW J. PEASE Andrew J. Pease	Director	March 26, 2024
/s/ CHRISTINE RUSSELL Christine Russell	Director	March 26, 2024
/s/ GARY H. TAUSS Gary H. Tauss	Director	March 26, 2024









QuickLogic Corporation
Trademark Status Report (by mark)






December 31, 2023

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
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

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

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	UK00904326931	Registered
				4/20/2006	UK00904326931	
QUICKLOGIC		United Kingdom	9, 38, 42	11/11/2014	UK00913447826	Registered
				3/6/2015	UK00913447826	
QUICKLOGIC		United States	9	9/4/2014	86385987	Registered
				11/3/2015	4843994	
QUICKLOGIC		United States	9	9/9/2004	78481189	Registered
				11/8/2005	3013357	
QUICKLOGIC (and design) (new)		Australia	9	10/28/2014	1654929	Registered
				4/10/2015	1654929	
QUICKLOGIC (and design) (new)		Canada	9	1/6/2015	1709542	Registered
				9/8/2016	TMA948771	
QUICKLOGIC (and design) (new)		China	9	2/5/2015	16314202	Registered
				5/14/2016	16314202	
QUICKLOGIC (and design) (new)		EUTM	9, 38, 42	11/11/2014	013447842	Registered
				3/6/2015	013447842	
QUICKLOGIC (and design) (new)		Hong Kong	9	11/25/2014	303213422	Registered
				8/13/2015	303213422	
QUICKLOGIC (and design) (new)		India	9	1/27/2015	2890589	Registered
				1/27/2017	2890589	
QUICKLOGIC (and design) (new)		Israel	9	11/26/2014	270027	Registered
				11/2/2016	270027	
QUICKLOGIC (and design) (new)		Japan	9	12/1/2014	2014100966	Registered
				10/2/2015	5797250	

Trademark	TM Image	Country	Class	App. Date Reg. Date	App. No. Reg. No.	Status
QUICKLOGIC (and design) (new)		Singapore	9	1/7/2015	40201500379T	Registered
QUICKLOGIC (and design) (new)		South Korea	9	1/7/2015	40201500379T	
QUICKLOGIC (and design) (new)		Taiwan	9	1/28/2015	4020150006534	Registered
QUICKLOGIC (and design) (new)		United Kingdom	9, 38, 42	11/11/2015	401142361	
QUICKLOGIC (and design) (new)		United States	9	1/26/2015	104004598	Registered
VIALINK		United States	9	3/16/2016	01758796	
				11/11/2014	UK00913447842	Registered
				3/6/2015	UK00913447842	
				9/4/2014	86385990	Registered
				11/3/2015	4843995	
				2/20/1990	74030945	Registered
				6/30/1992	1698304	
						<i>Record Count</i>
						57

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

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-266942) and Form S-8 (Nos. 333-34898, 333-34900, 333-34902, 333-76022, 333-123515, 333-159498, 333-208060, 333-231806, 333-237879, 333-256300, and 333-265079) of QuickLogic Corporation (the "Company"), of our report dated March 26, 2024, relating to the consolidated financial statements and schedule of the Company, appearing in this Annual Report on Form 10-K of the Company for the year ended December 31, 2023.

/s/ Moss Adams LLP

San Francisco, California
March 26, 2024

CERTIFICATIONS

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 26, 2024

/s/ Brian C. Faith

Brian C. Faith
President and Chief Executive Officer

CERTIFICATIONS

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 26, 2024

/s/ Elias Nader

Elias Nader

Chief Financial Officer and SVP, Finance

**CERTIFICATION OF CHIEF EXECUTIVE 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 December 31, 2023 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:	<u>/s/ Brian C. Faith</u>
Date:	March 26, 2024
Name:	Brian C. Faith
Title:	<i>President and Chief Executive Officer</i>

CERTIFICATION OF 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, 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 December 31, 2023, 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:	<u>/s/ Elias Nader</u>
Date:	March 26, 2024
Name:	Elias Nader
Title:	Chief Financial Officer and SVP, Finance

CLAWBACK POLICY

AS OF 11/30/2023

QUICKLOGIC CORPORATION

POLICY FOR THE
RECOVERY OF ERRONEOUSLY AWARDED COMPENSATION

A. OVERVIEW

In accordance with the applicable rules The Nasdaq Stock Market (the "**Nasdaq Rules**"), Section 10D and Rule 10D-1 of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**") ("**Rule 10D-1**"), the Board of Directors (the "**Board**") of QuickLogic Corporation (the "**Company**") has adopted this Policy (the "**Policy**") to provide for the recovery of erroneously awarded Incentive-based Compensation from Executive Officers. All capitalized terms used and not otherwise defined herein shall have the meanings set forth in Section H, below.

B. RECOVERY OF ERRONEOUSLY AWARDED COMPENSATION

(1) In the event of an Accounting Restatement, the Company will reasonably promptly recover the Erroneously Awarded Compensation Received in accordance with Nasdaq Rules and Rule 10D-1 as follows:

- (i) After an Accounting Restatement, the Compensation Committee (if composed entirely of independent directors, or in the absence of such a committee, a majority of independent directors serving on the Board) (the "**Committee**") shall determine the amount of any Erroneously Awarded Compensation Received by each Executive Officer and shall promptly notify each Executive Officer with a written notice containing the amount of any Erroneously Awarded Compensation and a demand for repayment or return of such compensation, as applicable.
- (a) For Incentive-based Compensation based on (or derived from) the Company's stock price or total shareholder return, where the amount of Erroneously Awarded Compensation is not subject to mathematical recalculation directly from the information in the applicable Accounting Restatement:
 - i. The amount to be repaid or returned shall be determined by the Committee based on a reasonable estimate of the effect of the Accounting Restatement on the Company's stock price or total shareholder return upon which the Incentive-based Compensation was Received; and
 - ii. The Company shall maintain documentation of the determination of such reasonable estimate and provide the relevant documentation as required to the Nasdaq.
- (ii) The Committee shall have discretion to determine the appropriate means of recovering Erroneously Awarded Compensation based on the particular facts and circumstances. Notwithstanding the foregoing, except as set forth in Section B(2) below, in no event may the Company accept an amount that is less than the amount of Erroneously Awarded Compensation in satisfaction of an Executive Officer's obligations hereunder.
- (iii) To the extent that the Executive Officer has already reimbursed the Company for any Erroneously Awarded Compensation Received under any duplicative recovery obligations established by the Company or applicable law, it shall be appropriate for any such reimbursed amount to be credited to the amount of Erroneously Awarded Compensation that is subject to recovery under this Policy.
- (iv) To the extent that an Executive Officer fails to repay all Erroneously Awarded Compensation to the Company when due, the Company shall take all actions reasonable and appropriate to recover such Erroneously Awarded Compensation from the applicable Executive Officer. The applicable Executive Officer shall be required to reimburse the Company for any and all expenses reasonably incurred (including legal fees) by the Company in recovering such Erroneously Awarded Compensation in accordance with the immediately preceding sentence.

(2) Notwithstanding anything herein to the contrary, the Company shall not be required to take the actions contemplated by Section B(1) above if the Committee (which, as specified above, is composed entirely of independent directors or in the absence of such a committee, a majority of the independent directors serving on the Board) determines that recovery would be impracticable *and* any of the following two conditions are met:

- (i) The Committee has determined that the direct expenses paid to a third party to assist in enforcing the Policy would exceed the amount to be recovered. Before making this determination, the Company must make a reasonable attempt to recover the Erroneously Awarded Compensation, documented such attempt(s) and provided such documentation to the Nasdaq; or
- (ii) Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of Section 401(a)(13) or Section 411(a) of the Internal Revenue Code of 1986, as amended, and regulations thereunder.

C. DISCLOSURE REQUIREMENTS

The Company shall file all disclosures with respect to this Policy required by applicable U.S. Securities and Exchange Commission ("SEC") filings and rules.

D. PROHIBITION OF INDEMNIFICATION

The Company shall not be permitted to insure or indemnify any Executive Officer against (i) the loss of any Erroneously Awarded Compensation that is repaid, returned or recovered pursuant to the terms of this Policy, or (ii) any claims relating to the Company's enforcement of its rights under this Policy. Further, the Company shall not enter into any agreement that exempts any Incentive-based Compensation that is granted, paid or awarded to an Executive Officer from the application of this Policy or that waives the Company's right to recovery of any Erroneously Awarded Compensation, and this Policy shall supersede any such agreement (whether entered into before, on or after the Effective Date of this Policy).

E. ADMINISTRATION AND INTERPRETATION

This Policy shall be administered by the Committee, and any determinations made by the Committee shall be final and binding on all affected individuals.

The Committee is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate, or advisable for the administration of this Policy and for the Company's compliance with Nasdaq Rules, Section 10D, Rule 10D-1 and any other applicable law, regulation, rule or interpretation of the SEC or Nasdaq promulgated or issued in connection therewith.

F. AMENDMENT; TERMINATION

The Committee may amend this Policy from time to time in its discretion and shall amend this Policy as it deems necessary. Notwithstanding anything in this Section F to the contrary, no amendment or termination of this Policy shall be effective if such amendment or termination would (after taking into account any actions taken by the Company contemporaneously with such amendment or termination) cause the Company to violate any federal securities laws, SEC rule or Nasdaq rule.

G. OTHER RECOVERY RIGHTS

This Policy shall be binding and enforceable against all Executive Officers and, to the extent required by applicable law or guidance from the SEC or Nasdaq, their beneficiaries, heirs, executors, administrators or other legal representatives. The Committee intends that this Policy will be applied to the fullest extent required by applicable law. Any employment agreement, equity award agreement, compensatory plan or any other agreement or arrangement with an Executive Officer shall be deemed to include, as a condition to the grant of any benefit thereunder, an agreement by the Executive Officer to abide by the terms of this Policy. Any right of recovery under this Policy is in addition to, and not in lieu of, any other remedies or rights of recovery that may be available to the Company under applicable law, regulation or rule or pursuant to the terms of any policy of the Company or any provision in any employment agreement, equity award agreement, compensatory plan, agreement or other arrangement.

H. DEFINITIONS

For purposes of this Policy, the following capitalized terms shall have the meanings set forth below.

(1) **"Accounting Restatement"** means an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements (a "Big R" restatement), or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period (a "little r" restatement).

(2) **"Clawback Eligible Incentive Compensation"** means all Incentive-based Compensation Received by an Executive Officer (i) on or after the effective date of the applicable Nasdaq rules, (ii) after beginning service as an Executive Officer, (iii) who served as an Executive Officer at any time during the applicable performance period relating to any Incentive-based Compensation (whether or not such Executive Officer is serving at the time the Erroneously Awarded Compensation is required to be repaid to the Company), (iv) while the Company has a class of securities listed on a national securities exchange or a national securities association, and (v) during the applicable Clawback Period (as defined below).

(3) **"Clawback Period"** means, with respect to any Accounting Restatement, the three completed fiscal years of the Company immediately preceding the Restatement Date (as defined below), and if the Company changes its fiscal year, any transition period of less than nine months within or immediately following those three completed fiscal years.

(4) **"Erroneously Awarded Compensation"** means, with respect to each Executive Officer in connection with an Accounting Restatement, the amount of Clawback Eligible Incentive Compensation that exceeds the amount of Incentive-based Compensation that otherwise would have been Received had it been determined based on the restated amounts, computed without regard to any taxes paid.

(5) **"Executive Officer"** means each individual who is currently or was previously designated as an "officer" of the Company as defined in Rule 16a-1(f) under the Exchange Act. For the avoidance of doubt, the identification of an executive officer for purposes of this Policy shall include each executive officer who is or was identified pursuant to Item 401(b) of Regulation S-K or Item 6.A of Form 20-F, as applicable, as well as the principal financial officer and principal accounting officer (or, if there is no principal accounting officer, the controller).

(6) **"Financial Reporting Measures"** means measures that are determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and all other measures that are derived wholly or in part from such measures. Stock price and total shareholder return (and any measures that are derived wholly or in part from stock price or total shareholder return) shall, for purposes of this Policy, be considered Financial Reporting Measures. For the avoidance of doubt, a Financial Reporting Measure need not be presented in the Company's financial statements or included in a filing with the SEC.

(7) **"Incentive-based Compensation"** means any compensation that is granted, earned or vested based wholly or in part upon the attainment of a Financial Reporting Measure.

(8) **"Nasdaq"** means The Nasdaq Stock Market.

(9) **"Received"** means, with respect to any Incentive-based Compensation, actual or deemed receipt, and Incentive-based Compensation shall be deemed received in the Company's fiscal period during which the Financial Reporting Measure specified in the Incentive-based Compensation award is attained, even if the payment or grant of the Incentive-based Compensation to the Executive Officer occurs after the end of that period.

(10) **"Restatement Date"** means the earlier to occur of (i) the date the Board, a committee of the Board or the officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement, or (ii) the date a court, regulator or other legally authorized body directs the Company to prepare an Accounting Restatement.

Effective as of November 30, 2023.

Exhibit A

ATTESTATION AND ACKNOWLEDGEMENT OF POLICY FOR THE RECOVERY OF ERRONEOUSLY AWARDED COMPENSATION

By my signature below, I acknowledge and agree that:

- I have received and read the attached Policy for the Recovery of Erroneously Awarded Compensation (this “ **Policy**”).
- I hereby agree to abide by all of the terms of this Policy both during and after my employment with the Company, including, without limitation, by promptly repaying or returning any Erroneously Awarded Compensation to the Company as determined in accordance with this Policy.

Signature: _____

Printed Name: _____

Date: _____