

**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, 2022

OR

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

For the transition period from to
Commission file number 001-40960

ARTERIS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

27-0117058

(I.R.S. Employer Identification No.)

**595 Millich Dr. Suite 200
Campbell, CA 95008
(408) 470-7300**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.001 par value	AIP	The Nasdaq Stock Market LLC

Securities registered pursuant to section 12(g) of the Act:

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

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

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 x No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes x No o

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

Large accelerated filer	o	Accelerated filer	o
Non-accelerated filer	x	Smaller reporting company	x
		Emerging growth company	x

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. o

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. o

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. o

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 Section 240.10D-1(b). o

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

As of June 30, 2022, the aggregate market value of shares held by non-affiliates of the registrant (based upon the closing sale prices of such shares on the Nasdaq Global Select Market on June 30, 2022) was approximately \$144.1 million. Shares of common stock held by each officer, director and entities affiliated with directors have been excluded because such persons may be deemed to be "affiliates" as that term is defined under the rules and regulations of the Exchange Act. This determination of affiliate status is not necessarily a conclusive determination for any other purpose.

As of February 21, 2023, there were 34,792,535 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement relating to the 2023 Annual Meeting of Stockholders are incorporated herein by references in Part III of this Annual Report on Form 10-K to the extent stated herein. Such Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2022.

Table of Contents

	<u>Page</u>
<u>PART I</u>	
<u>Item 1. Business.</u>	5
<u>Item 1A. Risk Factors.</u>	23
<u>Item 1B. Unresolved Staff Comments.</u>	57
<u>Item 2. Properties.</u>	57
<u>Item 3. Legal Proceedings.</u>	57
<u>Item 4. Mine Safety Disclosures.</u>	57
<u>PART II</u>	
<u>Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.</u>	58
<u>Item 6. [Reserved.]</u>	59
<u>Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.</u>	60
<u>Item 7A. Quantitative and Qualitative Disclosures About Market Risk.</u>	76
<u>Item 8. Financial Statements and Supplementary Data.</u>	78
<u>Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.</u>	115
<u>Item 9A. Controls and Procedures.</u>	115
<u>Item 9B. Other Information.</u>	116
<u>Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.</u>	116
<u>PART III</u>	
<u>Item 10. Directors, Executive Officers and Corporate Governance.</u>	117
<u>Item 11. Executive Compensation.</u>	117
<u>Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.</u>	117
<u>Item 13. Certain Relationships and Related Transactions, and Director Independence.</u>	117
<u>Item 14. Principal Accounting Fees and Services.</u>	117
<u>PART IV</u>	
<u>Item 15. Exhibits, Financial Statement Schedules.</u>	118
<u>Item 16. Form 10-K Summary.</u>	120
<u>Signatures</u>	121

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, (Securities Act), and Section 21E of the Securities Exchange Act of 1934, as amended (Exchange Act), about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this report are forward-looking statements. Statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, including, among others, statements regarding liquidity, growth and profitability strategies and factors and trends affecting our business are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expects,” “plans,” “anticipates,” “could,” “intends,” “targets,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this Annual Report on Form 10-K include, among other things, statements about:

- our expectations regarding our revenue, expenses, and other operating results;
- our ability to acquire new customers and successfully retain existing customers;
- our ability to achieve or sustain our profitability;
- future investments in our business, our anticipated capital expenditures, and our estimates regarding our capital requirements;
- the costs and success of our sales and marketing efforts, and our ability to promote our brand;
- our growth strategies;
- the estimated addressable market opportunity;
- our reliance on key personnel and our ability to identify, recruit, and retain skilled personnel;
- our ability to effectively manage our growth;
- our ability to protect our intellectual property rights and any costs associated therewith;
- the effects of COVID-19 or other public health crises;
- developments and expectations regarding developments and projections relating to our competitors and our industry; and
- our expectations regarding the time during which we will be an emerging growth company under the Jumpstart Our Business Startup Act of 2012.

The forward-looking statements in this report are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. Forward-looking statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. We believe that these factors include, but are not limited to, the factors set forth under “Risk Factors.” Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

These forward-looking statements speak only as of the date of this Annual Report on Form 10-K. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained in this report after we distribute this Annual Report on Form 10-K, whether as a result of any new information, future events or otherwise. We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, or investments.

SUMMARY OF MATERIAL RISKS ASSOCIATED WITH OUR BUSINESS

Our business is subject to numerous risks and uncertainties that you should be aware, including those described in the section entitled “Risk Factors.” The risks include the following:

- We face significant competition from larger companies and third party providers that may deploy their resources so they can develop their IP solutions internally;
- We have a history of net losses, and we may not achieve or maintain profitability in the future;
- Because our IP solutions are components of end products, if semiconductor companies, system producers and/or end product producer companies in the automotive market, enterprise computing market, communications market, consumer electronics market, and industrial market do not incorporate our solutions into their end products or if the end products of our customers do not achieve market acceptance, we may not be able to generate adequate license sales and royalty income from our products;
- We depend on market acceptance of third-party semiconductor IP;
- The success of our business depends on sustaining or growing our licensing revenue and the failure to achieve such revenue would lead to a material decline in our results of operations;
- The nature of the design win process requires us to incur significant expenses without any guarantee that research and development and sales efforts will generate revenue, which could adversely affect our financial results;
- Even if we succeed in securing design wins for our IP interconnect and other solutions and our IP deployment solutions, we may not generate timely or sufficient margins or margins from those wins and our financial results could suffer;
- Claims by other companies that we infringe their intellectual property rights or that patents on which we rely are invalid could adversely affect our business;
- We continually pursue new IP interconnect and other solutions and IP deployment technology initiatives, and if we fail to successfully carry out these initiatives, our business could be harmed;
- We may have to invest more resources in research and development than anticipated, which could increase our operating expenses and negatively affect our operating results;
- We are subject to government regulation, including import, export and economic sanctions laws and regulations that may expose us to liability and increase our costs;
- Product errors or defects could expose us to liability and harm our reputation and we could lose market share;
- If we fail to offer high-quality support, our reputation could suffer;
- Our dependence on international customers and operations also subjects us to a range of other additional regulatory, operational, financial and political risks that could adversely affect our financial results;
- If we are unable to protect our proprietary technology and inventions through patents and other IP rights, our ability to compete successfully and our financial results could be adversely impacted; and
- We face risks associated with doing business in China.

The summary risk factors described above should be read together with the text of the full risk factors below in the section entitled “Risk Factors” and the other information set forth in this Annual Report on Form 10-K, including our consolidated financial statements and the related notes, as well as in other documents that we file with the U.S. Securities and Exchange Commission. The risks summarized above or described in full below are not the only risks that we face. Additional risks and uncertainties not precisely known to us or that we currently deem to be immaterial may also materially adversely affect our business, financial condition, results of operations, and future growth prospects.

Part I

Item 1. Business

Overview

We are a leading provider of semiconductor system IP, including interconnect and other intellectual property, (collectively, System IP) technology that manages the on-chip communications and IP block deployments in System-on-Chip (SoC) semiconductors. Our leading proprietary System IP solutions achieve this by connecting client IP blocks such as processors, memories, artificial intelligence/machine learning (AI/ML) accelerators, graphics subsystems, safety and security, and other input/output subsystems (I/Os) via multiple Network-on-Chips (NoCs) in order for our customers to experience faster SoC targeting, as well as, more efficient, and lower cost solutions. Growth in the total addressable market (TAM) for our solutions is being driven by growing SoC sophistication and associated complexity. The addition of more processors, channels of memory access, machine learning sections, chiplets, additional I/Os interface standards, and other subsystems within SoCs is driving the need for more advanced System IP, including NoC interconnect IP's. The growth in the numbers of these connected on-chip subsystems places an increasing premium on the interconnect IP capability to move data inside complex SoCs. We believe this increase in SoC complexity has created a significant opportunity for sophisticated System IP solutions that incorporate NoC interconnect IP, IP deployment software and NoC interface IP (consisting of peripheral data transport IP and control plane networks connected to NoC interconnect IPs). Moreover, our technology can also provide more cost-effective solutions and reduce the risks of building and maintaining in-house NoC teams, which we believe has positively contributed to our market segment share growth.

Founded in 2003, we are among the pioneers in the development of NoC IP technology for on-chip communication that addresses the growing complexity, performance, and cost requirements of SoC semiconductors and as a result, we have emerged as a global leader. Over time, we have expanded and scaled our interconnect IP and other IP businesses to provide hardware, software, documentation, support, and training under a license fee and a royalty business model, to companies that design and produce semiconductors worldwide and increasingly also to their electronic systems customers. Our IP deployment capabilities were significantly enhanced by our acquisitions of Magillem in 2020 and Semifore in 2022, complementing our interconnect IP solutions by helping automate the customer configuration of its NoC IPs, the process of integrating and assembling all the customer's IP blocks into SoC hardware, and ensuring correct hardware-software integration for software development. Products incorporating our IP are used to carry important data inside today's complex SoCs across a broad range of applications including automotive, enterprise computing, communications, consumer electronics, and industrial markets. Our interconnect IP solutions offer proven connections to multiple industry-standard processors such as x86, Arm, RISC-V, CEVA, Synopsys ARC, Cadence Tensilica and MIPS, as well as memory controllers, I/O and a variety of IP subsystems, to enable customers to integrate such IP blocks with high levels of efficiency and performance. Our solutions enable customer innovation because they are configurable for each customer's design flow and SoC development projects and have wide applicability for many types of SoCs, having been designed into over three billion production SoCs.

Traditional on-chip communication methods, including bus and crossbar interconnect IPs, are generally inadequate in handling modern semiconductor communications, and even more so for sophisticated applications or more complex designs. Technological advancements have led to increasingly complex SoCs that integrate numerous functions into a single semiconductor device. Massive amounts of wires, challenging timing closure, and routing congestion lead to greater die area and chip cost. Increased transistor density and design frequencies create higher power consumption leading to heat dissipation challenges and shorter battery life for electronic devices. These challenges have significantly complicated SoC innovation and contributed to the increasing adoption of System IP, across the growing number of customer design starts coupled with the expanding number of NoC IPs used in current SoC.

We leveraged our extensive technical expertise to develop a new method for on-chip communication, the NoC, to address these critical semiconductor development challenges. We accomplished this by pioneering the use of proprietary networking techniques for on-chip communications to remove the inherent architectural limitations of traditional on-chip communications, thereby improving ease of integration, performance, silicon area, and power consumption. In doing so, we enable our customers to achieve their design goals faster, more efficiently and at lower costs. In addition, our IP deployment software enables easier IP integration of our interconnect IPs – among other IP blocks that make up an SoC, across both hardware and software.

We work directly with our customers throughout the SoC development process and seek to develop long-term, sustainable relationships with them as our technology becomes embedded in their products. Increasingly, we are also seeing system companies and even their customers becoming directly involved in SoC and NoC specifications and design, further expanding our ability to partner in this growing market. We also leverage our long history in interconnect IP designs and are able to serve a broad range of applications and deliver application and customer-specific features to our customers. For example, we are a leader in the market of interconnect for advanced driver assistance systems (ADAS) SoCs, which we believe is a result of our quality, reliability, and innovative technology targeted at that business application, and longstanding collaboration with automotive semiconductor companies, Tier 1 suppliers, and car manufacturing original equipment manufacturers (OEMs).

We provide solutions for the global SoC market and estimate that the TAM for System IP solutions was \$1.3 billion in 2021. We further estimate that the TAM will reach \$3.2 billion in 2026, driven by an increasing number of SoC designs and growing complexity, increasing average selling prices of interconnect IP and IP deployment software, and the growing proliferation of the NoC interface IP market segment. More specifically, we believe our growth will be driven by technology trends requiring more sophisticated on-chip processing in the automotive, communications, enterprise computing, consumer electronics, and industrial markets. Also, the need for sophisticated system IP products is growing rapidly in order to address the requirements of smaller die size, multi-die systems, lower power consumption, and higher operation frequency, as well as management of critical net latency in a timely and cost-effective manner. As a result, we believe these trends have led to an increased economic benefit of in-licensing commercial semiconductor design IP, a trend that we expect to continue.

For the years ended December 31, 2022 and 2021, we generated \$50.4 million and \$37.9 million in revenue, \$6.8 million and \$0.8 million in cash flows used in operating activities, and \$27.4 million and \$23.4 million in net loss, respectively. We expect to incur further net losses in the short term as we invest in our business. As of December 31, 2022, we had Annual Contract Value (ACV), which we define for an individual customer agreement as the total fixed fees under the agreement divided by the number of years in the agreement term, of \$49.2 million. ACV and trailing twelve months royalties and other revenue reached \$52.4 million as of December 31, 2022. Since our inception, our interconnect IP solutions have been used in over 667 unique SoC Design Starts. In 2022, we added 38 net new Active Customers. We define Active Customers as customers who have entered into a license agreement with us that remains in effect.

Industry Background

Semiconductor complexity is increasing as the industry increasingly moves from integrated circuits (ICs) that process data to SoCs that make decisions. Historically, a chip's complexity was much lower as processors were connected to memories with relatively few peripheral IP block functions. Once the industry moved to 40 nanometer (nm) and more advanced process geometries, it became possible to build more complex SoCs, such as mobile phone application processors, which contained many more IP blocks and consequently required more sophisticated on-chip communications. With the rise of machine learning algorithms and architectures, such as convolutional neural networks, and semiconductor process technologies reaching 3nm geometries, with roadmaps to go beyond these process technologies, it became possible to build complex decision-making SoCs for applications such as automated driving and enterprise computing data center acceleration. Integration of processors, accelerators, machine learning subsystems, sophisticated multi-channel memories, and an ever-larger number of interface standards have placed a premium on the ability to move data efficiently inside the SoC and between SoC chiplets. These trends further highlight the growing importance of interconnect IP in today's SoCs, and more so for more advanced or complex SoCs.

Increasing chip design complexity leads to rising costs. The slowing of Moore's law and the need for more functionality and performance has necessitated new architectural paradigms and accelerated the move to more advanced process nodes. This has resulted in the adoption of significantly more expensive and complex chip design methods and manufacturing processes, creating a substantial rise in semiconductor design costs. Costs are projected to continue to rise as the number of IP blocks on an SoC are projected to increase more than 20% from 2021 to 2024 according to Semico Research, placing increasing importance on the cost efficiencies provided by System IP solutions.

Increasing SoC complexity leads to increasing System IP value. It is common for today's SoC to contain multiple types of data traffic in the same design. In addition, the large number of IP blocks in complex SoCs means that more data traffic must be successfully managed. Data must be successfully brought to each of these IP blocks at a time where such data is required—otherwise that IP block will be “starved” of data. As their size has grown, partially due to the incorporation of Machine Learning subsystems, SoCs are being split into chiplets, which are smaller pieces of silicon packaged together into one SoC unit. Communication between chiplets adds complexity, which increases the value of interconnect IP. Another complexity factor is the increasing use of cache coherent traffic which makes multiple processors and/or accelerators look like a single hardware programming space to the application software, which simplifies software development. Many complex SoCs now use cache coherent and non-coherent traffic in a single SoC, raising the volume and value of our System IP solutions.

Increasing SoC complexity puts pressure on IP block assembly and connectivity efforts. With potentially hundreds of IP blocks coming from a variety of vendors and internal development groups, SoC teams need to manage the IP supply chains with increasingly capable IP deployment software. These teams and their electronic design software (EDA) groups also need to put in place increasingly capable SoC integration methodologies to improve SoC development success. These developments have driven the semiconductor industry to use IP deployment standards such as IEEE 1685 IP-XACT which are becoming increasingly sophisticated with each generation and require more sophisticated software to support them.

Increasing demand from emerging end markets and new market participants. New applications in markets such as automotive, enterprise computing, communications, consumer electronics, and industrial have increased the diversity and overall demand in the semiconductor market. These new applications, often including an increasing level of AI/ML technology, safety, or complex hardware-software integrations, have led to an increase in the number of complex SoC designs. Chips used for AI training and inference acceleration have increased in die size, further increasing design costs with new design complexities and performance requirements. Also, new market participants, such as electronic system companies, internet hyperscalers, and automotive OEMs, have begun internally developing their own chips. The increasing demand from current and new market entrants is increasing the need for System IP solutions.

Shift to third-party IP for cost benefits, product differentiation, and accelerated time to market. It is difficult, time-consuming and expensive to develop state-of-the-art SoC interconnect IP solutions. We believe this dynamic is accelerating the degree to which interconnect IP solutions are outsourced to commercial vendors. Commercial interconnect vendors, such as Arteris, have the potential to accelerate time-to-market because they engage with a greater variety of SoC applications and a greater variety of designs than the typical internal interconnect teams. Commercial vendors are also able to spread interconnect and SoC development costs across a greater number of projects than internal interconnect and design teams.

System IP Market

SoC-type semiconductors consist of pre-made IP blocks that are either licensed from third parties by semiconductor and electronics companies or developed in-house. These IP blocks must be assembled into SoCs as efficiently as possible to address semiconductor company and system OEM customer requirements. Many of these IP blocks, including processors and other functional blocks, such as machine learning and vision subsystems, perform processing functions and execute complex software stacks. These IP blocks can number in the hundreds on a single chip and generate and consume commands and data, as well as work together as a unit. As SoCs become more complex, there has emerged a class of silicon IP and software tools designed to assemble these IP blocks into a functioning SoC at target cost and performance. We call this the System IP market. The System IP market consists of interconnect IP, NoC interface IP and IP deployment software. According to Informa PLC (Omdia), the semiconductor market is set to grow from about \$604 billion in 2022 to \$734 billion in 2026. Our System IP is used across a broad set of applications, with a market that we estimated to be \$1.3 billion in 2021, which we expect to expand to \$3.2 billion by 2026. We believe our 2026 estimated TAM will comprise an approximately \$1.6 billion NoC Interconnect IP market, an approximately \$500 million IP software deployment market and an approximately \$1.1 billion NoC Interface IP market. According to Deloitte, automotive electronics and industrial electronics are expected to be the fastest growing markets in the semiconductor industry, with revenue from consumer electronics, enterprise computing, communication and industrial set to grow steadily. As SoC technology evolves, we believe that there is a significant opportunity for us to grow our value by introducing additional functionality for our customers to integrate their SoCs efficiently using our System IP solutions.

Omdia segments the aforementioned semiconductor and OEM markets into six industry segments: automotive, computing, consumer, industrial, wireless, and wired communication. Our market penetration spans all of these segments and customer adoption is most pronounced in the automotive, enterprise computing, consumer electronics, communications across wired and wireless, and industrial segments, driven by a higher rate of disruptive innovations. While the key focus is in the SoC design itself, we greatly benefit from the verticalization trend in which traditional OEMs increase the control of their design chain driving system requirements into semiconductor and IP companies, and often take on the semiconductor design themselves or with their semiconductor company suppliers. These trends of specialization and OEMs controlling their own destiny in light of supply chain disruptions are amplified by trends towards heterogeneous disaggregation of SoC design into multi-die systems with many chiplets and 3D-IC assembly. Overlaid over the industry vertical markets mentioned above, the differentiation of semiconductor IP and tools is increasingly determined by the ability to address horizontal market aspects that span across the industry verticals. For instance, we differentiate with our readiness for safety certification for mission-critical and automotive designs, our ability to address specific requirements posed by AI/ML designs in enterprise computing data centers, automotive autonomous driving, and consumer and industrial edge designs. Our support includes the standard processor architectures including x86, Arm, RISC-V and others, as well as our readiness to enable our customers to optimize their System IP for specific semiconductor manufacturing technologies (such as TSMC, Samsung and Intel foundries).

Automotive Applications

The automotive market is undergoing technology disruption with the advent of automated driving, electrification, electronic control unit consolidation and vehicle connectivity to the internet. Furthermore, cars are becoming increasingly connected to a large network of data centers, roadside and city infrastructures, and other vehicles, creating the “Internet of Cars.” Based on an IHS report, management believes there will be an average of 23 complex SoCs per electronically enabled vehicle by 2026. As the electronically enabled car has continued to grow in sophistication and performance, complex SoCs must increasingly receive, process and communicate data, further requiring advanced interconnect IP solutions.

The different levels of automated driving are defined as “Level 1” to “Level 5” with “Level 1” being sophisticated cruise control and “Level 5” is fully automated without the need for human driving intervention. According to IHS Markit, the annual production of vehicles equipped with ADAS systems considered “Level 2” and above is estimated to reach 43.5 million units in 2027. The average number of NoC-enabled SoCs and high-end MCUs in Level 1 and above vehicles is expected to be over 24 in 2027, for a total estimate of over 1.6 billion automotive complex SoCs and MCU.

Due to the complex requirements of electronically enabled vehicles and the high rate of innovation required to compete in the “Internet of Cars” revolution, industry players are designing SoCs tailored to their sophisticated software and applications. This will result in more complex automotive-targeted SoCs, which we expect will continue to grow demand for reliable, configurable, and proven interconnect technologies that accelerate a product’s time to market while reducing overall costs.

The “Internet of Cars” revolution is disrupting the automotive supply chain. New business models such as ride-sharing, transportation subscriptions and transportation as a service are being created. New potential entrants such as ride-sharing companies, large data center companies, and new automotive startups are changing the automotive business landscape, while increasing demand for more sophisticated transportation-targeted semiconductors and therefore System IP solutions. In addition, the traditional automotive supply chain is also restructuring, with semiconductor vendors, automotive “tier 1” suppliers and automotive OEMs competing to own and control the electronic architecture of these cars. To compete, companies at all levels of the automotive supply chain have started creating their own chips, thus increasing the number of SoCs in the automotive industry and increasing demand for interconnect IP solutions.

Per Omdia, the automotive semiconductor market is set to grow with an 11.1% CAGR from 2022 to 2026, with the ADAS segment - a key area where we have significant System IP solution differentiation – to grow with a CAGR of 20.7% over the same period.

The move toward the Internet of Cars may be non-linear and take longer than anticipated but since hardware decisions are often made between six and seven years before deployment, we believe that over the next 20 to 30 years, the creation of the internet of cars represents one of the largest semiconductor opportunities available.

Enterprise Computing Applications

Large-scale cloud data centers are augmenting and replacing corporate data centers. This evolution expands the market size and value for enterprise solid-state storage systems and the custom ASICs that control them, further strengthening demand for interconnect technologies that improve storage performance and provide data integrity. In addition, enterprise hyperscale computing companies are now creating proprietary SoCs and accelerators for their own products and data centers. We believe that these new entrants into semiconductor design will increasingly provide market opportunities for third-party System IP solutions, including those from Arteris.

With the advent of AI/ML, semiconductors have changed from being data processors to sophisticated and adaptive decision-making devices. AI/ML SoCs must be “trained” on large data sets that have to be collected from real-world data utilizing “training” SoCs. A different class of AI/ML SoCs uses such data to match the training data against actual data collected by sensors of the system utilizing “inference” SoCs. AI/ML is deployed in cloud data centers for applications such as personalized advertising and credit card fraud detection. AI/ML is also deployed at the edge of networks for applications such as automated driving, cell phones and numerous other applications, and is as such considered a technology addressing various industry vertical business segments.

Communications Applications

According to Gartner, 5.8 billion enterprise and automotive IoT endpoints were connected to the internet in 2020. Today, many of these endpoints are connected using 5G wireless communications and we believe that the number of 5G connected endpoints will significantly grow in the future. The wireless communications market is in the midst of disruption as it allows efficient machine-to-machine communications at a massive scope and scale. 5G technology allows the cost-efficient connections of massive numbers of embedded sensors and other devices into ultra-reliable, high-bandwidth, and low-latency networks. In short, 5G enables smart devices utilizing sophisticated SoCs to communicate more information at faster speeds while using less power. As 5G is adopted as the wireless market standard, it is expected to revolutionize markets, including cars and smart city vehicle infrastructure, factory automation, logistics, and consumer and business broadband.

We believe the transition to 5G will accelerate System IP market growth because the high complexity of 5G chips require more stringent requirements for bandwidth, latency, and power consumption, making an easy-to-integrate, high performance and low power on-chip interconnect a critical requirement. Gartner estimates 5G infrastructure semiconductor revenue will exceed \$1 billion by 2024, with 6G technology on the horizon.

Other Applications and Technologies

The consumer electronics and industrial markets are also expected to require increasingly complex chips primarily driven by the incorporation of AI/ML processing, particularly at the edge, increased use of 5G communications, and more stringent safety and security requirements. In addition, the chip market in these domains are sensitive to time-to-market pressures, which also generates the need for increased semiconductor design productivity and faster implementation as enhanced by sophisticated interconnect IP solutions. Our low-power features are valuable for battery life and power consumption in our targeted markets.

AI/ML semiconductor structures require multiple IP blocks that use peer-to-peer on-chip communications that have different data traffic characteristics than other parts of the SoC and thus require special interconnect features. Such interconnect features require greater attention to challenges including deadlock avoidance and mesh performance and the ability to transfer large amounts of data to memories.

Besides the AI/ML technology that is especially pronounced in high-performance enterprise computing and automotive application, as well as at the edge that enter the industrial, consumer electronics, and communications applications, functional safety is a key technology horizontal driving our differentiation and growth. We enable our customers to achieve ASIL-B and ASIL-D ISO 26262 certification with our products addressing the NoC Interconnect IP NoC Interface IP markets. Further, critical tools in our IP deployment software product portfolio have been TCL-certified by the TUV Sud to confirm that they are safe to use in automotive and mission-critical markets like aerospace & space as part of the industrial vertical.

Both our NoC Interconnect IP and NoC Interface IP are used alongside processor architecture and eventually mapped into semiconductor manufacturing technologies. Key processor architectures of note are the x86, Arm, and increasingly RISC-V processor architectures. We have entered into agreements with Arm in 2022 for automotive electronics and are an integral part of the RISC-V ecosystem providing the core interconnect IP for the growing number of SoCs deploying that processor architecture. Besides its safety aspects, we believe our NoC interconnect IP technology is differentiated through its ability to optimize designs for the physical layout, therefore believe we are part of the ecosystem of Cadence, Synopsys, Siemens EDA, as well as semiconductor manufacturing including TSMC, Samsung Foundry, GlobalFoundries, and Intel Foundry Services.

Industry Challenges

Interconnect IP development is a challenging, time-consuming, and expensive process. The need for robust, maintainable interconnect technology becomes increasingly important as chip designs become more complex and larger in size, both driven by advances in semiconductor manufacturing technology. As semiconductor manufacturing technology has advanced, it has increased the number of IP block functions that can be added to SoC type semiconductors. However, as more IP block functions are added to a chip, the sheer number of physical connections required for communications between the on-chip IP blocks grows massively. Therefore, the larger and more complex the SoC, the more important the on-chip interconnect for overall chip performance, power consumption and cost. Interconnect and IP deployment technology is key to allowing SoC designers to design these types of chips while meeting their technical and time-to-market requirements. The industry is challenged to meet these requirements by itself because of the technical know-how to do so. Further, any failures due to quality issues are enormously expensive and industry standards for mission-critical applications like automotive are costly to meet. All these technology trends combine to require a large initial investment and a long-time commitment for a chip design team or commercial interconnect IP company to create semiconductor IP and software technologies that satisfy industry needs.

- **Deep technical expertise and knowledge.** Interconnect development requires an interdisciplinary engineering team with expertise and skill sets across a wide-range of engineering and scientific domains including hardware architecture, design, verification, EDA-class software development, and SystemC modeling, as well as deep understanding of physical design, design methodologies and networking architectures. The design process requires expertise in developing advanced hardware architectures to handle data coherency and consistency across the interconnect to achieve a high-performance, low power implementation. Complex flows and methodologies as well as specialized languages to generate configurable hardware and interconnect configuration software must also be designed, with hardware configurations defined using thousands of parameters that need to be meticulously managed, with millions of combinations to be considered. The interconnect design process also requires engineers to have an awareness of the physical implementation and floorplan of the target chip to generate an architecture that meets SoC requirements in terms of timing, area, and power. Designers require an in-depth knowledge of graph theory, common interface protocols, data models, and graphical user interfaces. In addition, they require the skills to develop design methodologies to manage dependencies in project execution where the interconnect configuration software generates the hardware IP and associated data evidence of product quality and compliance with industry standards.
- **High quality.** Interconnect IP requires a systematic deployment of quality-oriented methodologies, as any customer-level problems in the interconnect will result in SoC project delays or even project failures. Engineering teams creating interconnects must invest heavily not only in skilled engineering resources to develop and verify, but also processes and methodologies that provide early indication of any potential quality issues. The best interconnect engineering teams also leverage these methodologies to help automate design and verification tasks, which helps improve time to market for the interconnect IP provider. If the interconnect has serious problems, the SoC will not be operational, resulting in significant economic losses.
- **Safety standards.** High reliability of the interconnect is a heightened requirement for mission-critical markets including automotive, industrial robotics, medical and space. An in-depth knowledge of and adherence to standards, such as the ISO 26262 automotive functional safety standards, further increases the challenge of developing a reliable interconnect targeted at these applications.
- **Long time commitment and high investment cost.** We believe the engineering development cycle for each new interconnect and the market development cycle to establish a significant market position for a customer or for a commercial vendor requires large teams, many years and great expense. Additionally, we believe the investment required by a customer to internally create a configurable interconnect technology for a new SoC can be very expensive compared to the cost of licensing from a proven interconnect IP provider.

- **Breadth of System IP solutions.** With needs to address cache coherent, non-coherent, machine learning and chiplet traffic, customers need a System IP solution that works together across all these data traffic types. IP deployment technologies allow customers to manage the deployment of the rest of the IP blocks in the SoC in order to ease SoC IP integration. Meeting such requirements requires significant enterprise scale in engineering and customer support. Necessity for such combined technologies amounts to a significant barrier to entry in terms of time, cost and customer adoption.

Given the above requirements and challenges, developing commercial interconnect IP and software tools require large engineering teams with advanced skill sets, significant amounts of time, and substantial financial investment. By licensing commercial interconnect IP, companies can free up resources to focus on developing new product capabilities and differentiators. Further, we believe the large investments needed to develop commercial interconnect IP also create barriers to entry for potential commercial competitors.

Our Solutions and Competitive Strengths

We are a leading provider of interconnect and other IP technology that manages the on-chip communications in SoC semiconductor devices. We believe our System IP is integral to our customers in the automotive, enterprise computing, consumer electronics, communications across wired and wireless, and industrial markets. Our core strengths include:

- **We help accelerate our customers' time to market.** Our interconnect IP and SoC cockpit software helps accelerate SoC development and integration at several different steps in the SoC design cycle. For example, we offer design exploration and modeling capability for SoC architects to explore the interconnect IP performance of their designs ahead of hardware description language generation to speed up SoC architecture definition. As another example, we have automated test bench generation to accelerate the verification of our interconnect IP products. Still further, our physical awareness capability allows the estimation of critical net latencies and estimates whether the interconnect IP will meet our customers' required timing. Our System IP product lines are structured so that our customers can customize the interconnect for their needs, helping accelerate interconnect IP customization for their particular SoC configurations. In addition to interconnect IP productivity features, we offer a combination of automated interconnect configuration software, pre-verified interfaces to IP block protocols, pre-verified interfaces to EDA tools and a pre-verified interconnect IP element library for rapid generation of customer-specific interconnect IP products. Our IP deployment solutions also help accelerate SoC development by enabling the IP blocks making up an SoC to be packaged in a standard format called IP-XACT (Institute of Electrical and Electronics Engineers—IEEE 1685), which provides a uniform IP block assembly and reuse methodology. The IP deployment tool suite includes numerous packages that allow the configuration of IP block exit port registers, establish high-level SoC connectivity and link documentation to the IP-XACT design information.
- **Our products help improve the performance of our customers' SoCs.** We believe that using our System IP solutions can result in improved SoC metrics such as higher performance, lower power consumption and smaller die area. We have extensive low-power management features such as three levels of clock gating and power domain features for low-power applications such as smartphone application processors and other SoCs for hand-held applications. We enable customers to partition their designs into “frequency domains”, allowing some domains to run at higher frequencies than others, in order to trade off performance against SoC power consumption.
- **We enable lower customer research and development and SoC unit costs.** We believe that we enable lower chip research and development costs, lower SoC unit costs and reduce project risk as compared to solutions developed internally or licensed from another vendor. We have targeted our interconnect IP to be area-efficient so that we can offer silicon area savings, and resulting chip cost savings, compared to other interconnect IP alternatives. For example, the interconnect IP generally makes up a meaningful proportion of the overall SoC area at the completed SoC stage, and savings of 1 square millimeter of area can potentially offer significant savings in terms of SoC unit costs. We provide an integrated package of software, hardware, documentation, verification tools and pre-verified interfaces to major IP blocks and EDA tools. We believe IP and software can save our customers time and money and enable them to focus on product differentiation and revenue generation.

- **We believe we have grown our product portfolio through robust and focused research and development.** Developing commercial interconnect IP and software tooling requires large and specialized engineering teams, significant amounts of time and extensive periods of commercial productization. We believe we have been the pioneer of using networking technology for on-chip communications and have been licensing such interconnect IP products since 2006. Our strategy is to deliver at least one new Interconnect IP or IP deployment product per year, and we have done so since 2013. As of December 31, 2022, we have 145 development engineers on staff covering IP hardware, software, verification, testing and methodology development. Such a sizeable, multi-disciplinary engineering team allows us to undertake System IP products of sizeable scale and permits us to work on multiple product development projects at the same time.
- **We have grown our solutions through targeted acquisitions.** We intend to continue to support a robust internal technology development program that is complemented by synergistic acquisitions to increase customer productivity and to lower SoC development and production costs. We believe we have the ability to complement our product development with selective acquisitions to strengthen our System IP product portfolio. With our acquisition of Magillem in 2020 and Semifore in 2022, we added complementary technology that helps automate process of integrating and assembling all the customers' IP blocks into an SoC, and its hardware-software integration to accelerate end product system development.
- **We are able to address mission critical applications.** We believe we are positioned to take advantage of the rapid growth of semiconductor content in cars. We have been focused on the automotive market segment since inception and have over 117 automotive SoC design wins. Additionally, we have established customer relationships with market leaders such as Mobileye, Intel, BMW, NXP and Bosch. In addition to ADAS and autonomous driving control systems, our interconnect IP is used in radar, lidar, vision, communications, and dashboard/driver management. As cars continue to grow in complexity and connectivity, we believe there will be significant growth in the number of increasingly powerful SoCs that will need automotive grade on-chip interconnect IP. Our interconnect IP is designed to meet the automotive safety integrity level D (ASIL D) of the ISO 26262 automotive functional safety standard, which is the highest level, helping to position us as an ideal partner to innovative companies in the advanced automotive SoC market. We believe our solutions make it easier for our automotive semiconductor "tier 1" and OEM customers to collaborate and meet functional safety standards by establishing traceability between requirements, specifications, hardware and software implementation, verification and testing, and quality assurance. Because of this, our IP deployment software is a complement to our interconnect IP in helping our customers meet their ISO 26262 functional safety requirements. Recently, our System IP and its resilience features have also seen increasing adoption for space exploration related applications.
- **We have developed a "Connected by Arteris" ecosystem to provide a broad set of System IP solutions.** Interconnect IP is the data transport backbone of the SoC, connecting IP blocks such as CPUs, GPUs and memory controllers. We work with suppliers who provide these blocks, including IP companies such as Arm, SiFive, MIPS, Synopsys, Cadence Design Systems, Cudasip and other RISC-V IP vendors to support their products and protocols working with our IP deployment solutions and interconnect IP products. By offering an unbiased, standards-based interconnect infrastructure to which other IP vendors can connect, and supporting a broad range of transaction protocols, we believe we have simplified the industry's development of heterogeneous SoCs while solidifying our role as a neutral, technology-agnostic provider across the semiconductor industry. In addition to on-chip integrations with partners, we work with EDA companies such as Synopsys, Cadence and Siemens to provide prepackaged interfaces to their EDA tools such as simulators, modeling systems, and logic and physical synthesis tools. By working closely with semiconductor IP and EDA leaders, some of whom compete with each other, we believe we have established credibility as a trusted enabler to integration of their products within our joint customers' chips and design flows.

- **We believe we benefit from distinct competitive advantages.** We believe our interconnect IP technology benefits from barriers to entry due to our many years of experience and the strength of our proprietary solutions, as well as the significant technical expertise and research costs required to develop a competitive product. We were founded in 2003 when we believe we helped pioneer the industry's NoC interconnect IP and have maintained our competitive position with our global team of 145 hardware and software engineers as of December 31, 2022. Developing interconnect IP requires an interdisciplinary engineering team with expertise and skill sets across a wide range of sciences and domains as well as a deep understanding of semiconductor physical design, design methodologies, and networking architectures. Building such teams and keeping them together over long periods of time presents a challenge for many companies and we believe it provides a competitive advantage to us. Additionally, strategic patience and focus are required to participate in the market. For example, we believe that the customer acquisition process has a typical duration of two to nine months; following this, a customer's chip design cycle is typically between one to three years. Customers typically start shipping their products containing our interconnect IP solutions between one to five years following completion of their product design, known as mass production at which point we start to receive royalties; this lasts for up to seven years or longer depending on the market segment. We also leverage our long history of interconnect IP design to deliver customer-specific features, further deepening our relationship and integration with the customer's product. We are able to market such features to the rest of our customer base, sharing the benefits of our research and development with them. With our System IP products embedded in our customers' SoCs, there are significant switching costs in moving to alternative solutions. We believe that our product quality and technical strength have enabled our high customer retention rate.
- **We offer global support for our System IP customers.** Interconnect IP technology is complex, and our customer support is critical for the successful deployment of our IP in our customers' designs. We support customers utilizing our interconnect IP solutions on a global basis with architectural reviews, training, implementation support, and tape-out support. We work directly with our customers throughout their design processes to develop long-term sustainable relationships as our technology becomes embedded in their products. We have 33 corporate and field application engineers in our global support organization. Many of our application engineers have advanced degrees, years of SoC design experience and passion for helping our customers drive their SoC designs to production status. We believe our application engineers are critical advisors to our customers' design teams and offer competitive value to our customer's SoC creation projects.

Our Growth Strategy

We believe that as SoCs become more numerous and complex, the value of System IP technology increases since it enables the efficient movement of data within the ever-growing number SoCs. We also believe that, as SoCs become more complex, interconnect IP technology becomes more time-consuming and riskier to develop internally within semiconductor and system companies, favoring System IP solutions provided by outside parties such as Arteris. As a dedicated interconnect IP provider, we enable our customers to leverage the knowledge and deep expertise developed by us through many years of focus on solutions for a variety of customers.

Our growth strategy includes the following:

- **Leverage our System IP technology leadership and focused research and development to provide solutions for the semiconductor industry that builds SoCs.** We devote the majority of our operating expenses to research and development of interconnect IP and IP deployment-related solutions and technologies to retain our System IP market position. We believe that the semiconductor industry needs an independent interconnect IP infrastructure that various IP block companies can connect to without competitive bias. We intend to remain neutral regarding the connection and integration of SoC IP blocks whether they are sourced from IP block vendors or are internally developed. We intend to continue to compete vigorously in the interconnect IP segment and to support and minimize the risks of competing with, our valued partners and customers developing non-interconnect IPs. We intend to remain focused on providing interconnect IP and software technologies for the semiconductor industry and system companies that build SoCs.

- **Address high-growth segments such as automotive, enterprise computing, consumer electronics, communications across wired and wireless, and industrial segments.** We are focused on fast-growing semiconductor market segments. We have been focused on the automotive market segment since 2012 and have over 117 design wins in this sector. We intend to continue providing regular introductions of interconnect IP products to enable the semiconductors that are connecting cars, roads, and the cloud resulting in the “Internet of Cars.” We are also focused on the emerging edge and wireless communications markets, which are particularly sensitive to power consumption and idle power, and we believe these market segments can continue to benefit greatly from our low-power interconnect IP solutions. In addition, we are targeting emerging AI/ML-enabled applications that leverage massively multi-core architectures. As of December 31, 2022, we had 100 customers who have built or are building advanced AI/ML-enabled applications, which accounted for 24 of our customers’ Design Starts. We intend to maintain our focus on automotive, enterprise computing, and consumer electronics, as well on technologies such as Safety, AI/ML and others, while expanding further within communications and industrial markets.
- **Expand our customer base through ongoing System IP innovation.** SoC evolution has continued at a rapid pace and with it the demand for System IP solutions. New technologies and trends driving the need for System IP development include innovations such as cache coherency outside of the processor subsystem, machine learning SoCs utilizing peer-to-peer data traffic, greater use of separate sets of dies, or chiplets, inside SoCs, and the increasing emphasis on silicon functionality and safety. We believe that the complexity of these trends necessitates ever-increasing sophisticated System IP solutions and represents a great opportunity for Arteris as a leading commercial company focused exclusively on these solutions. Our goal is to deliver interconnect IP technology and deployment solutions ahead of when the SoC industry requires them. We aim to deliver at least one new interconnect IP or IP deployment product every year, addressing new SoC technology needs. We intend to expand the functionality of interconnect by adding NoC interface IP products that leverage SoC data moving through our interconnect IP products. Such NoC interface IP products may include a variety of types of inter-chip links for seamless connectivity of chiplets, which make up larger system-in-package type SoCs and memory schedulers. These offer end-to-end quality of service (QoS) and error correction code (ECC) as well as a variety of new last-level cache memory products giving our customers the choice to either keep data on-chip or move it to off-chip dynamic random-access memory (DRAM). We believe such roadmap products can expand our TAM and offer an opportunity for us to further expand the value of our System IP products. In addition, we plan to continue to work with customers to deliver product enhancement releases for existing products. These requirements are identified in part by our global sales and application engineering organization that is engaged in helping customers utilize our products and solutions.
- **Expand our customer base through increased investment in sales and marketing.** We plan to continue to expand our global sales and application engineering organization, which has a strong presence in North America, Europe, the Middle East, China, South Korea, Japan, and India. We hire local talent who are attuned to the key regional needs of local markets, customers and languages. While most of our customer engagements are handled directly by our regional sales and application engineering forces, we utilize distributors in Israel and India for interconnect IP, although this represented less than 5% of our worldwide revenue in each 2022 and 2021. Our marketing is focused on helping customers understand the value of our solutions and creating awareness of the latest developments in our markets. We believe a key measure of our success is the number of successful SoCs produced by our customers utilizing our technology. To date, there have been over 341 production SoCs designed with our technology, which have been incorporated in approximately 3.0 billion SoCs that have been shipped in electronic systems.

- **Continue to pursue selective acquisitions and other strategic transactions, such as joint ventures, to acquire complementary solutions and accelerate growth.** We intend to continue to target acquisitions to achieve our objective of making our System IP solutions critical to the next generation of SoC design and development. For example, we acquired the assets of Magillem in 2020 and Semifore in 2022 to deliver synergy between the network-on-chip IP and tooling for IP packaging, SoC assembly, and hardware-software integration for software development teams. With these acquisitions, we added complementary technology to our portfolio that helps automate customer configuration, integration, and assembly of the interconnect into an SoC. In addition, these IP deployment tools allow us to gain a deep understanding of the entire “bill of materials” of the IP blocks integrated into an SoC, as the interconnect IP is the on-chip means to connect these blocks. We believe our planned continued integration of these technologies can provide substantially increased efficiency in the effective development of SoCs. In addition, we anticipate this integration can lead to added benefits such as automated documentation, traceability for quality processes and functional safety, and software driver optimization to reduce defects, providing significant customer value. For example, we invested in Transchip, a joint venture in China in the second quarter of 2022. In exchange for providing Transchip with a non-exclusive license (without standalone resale rights) to utilize substantially all of our interconnect IP products and an IP deployment solution, we retained a minority, non-controlling interest in Transchip. The other investors in this joint venture are principally Chinese-based venture capital entities and include one of our investors that holds less than 5% of our outstanding common stock and contributed cash.

NoC Interface IP Growth Opportunity

NoC IP carries the majority of the data in an SoC. As a result, there is an opportunity to add additional customer value by developing additional data plane and control plane capabilities that attach directly to our interconnect IPs and are implemented in SoCs by our IP software. Currently, we offer NoC interface IP products such as a memory scheduler, last-level cache, SoC data visibility and SoC debug IPs. We see an opportunity to further expand our product portfolio and TAM with additional control networks and subsystems that can accelerate our customers' ability to deliver production SoCs to their end markets. Such networks may include clocking, register management and interrupt networks. Control subsystems such as power management, security, performance monitoring and debug may provide additional value to customers looking to lower the cost and risk of SoC development. With the integration of interconnect IP and NoC interface IPs, we believe we would be able to provide end-to-end solutions for quality of service, system level security and SoC resilience. NoC interface IP represents a natural expansion of our technical and business capabilities.

Our Solutions

We provide semiconductor interconnect IP and IP deployment solutions to serve our target end-markets, including automotive, enterprise computing, consumer electronics, communications across wired and wireless, and industrial segments. We regularly release new products to address the rapid evolution of SoC technology, across our two core product platforms:

- a. **Network-on-Chip IP Products**
 - i. Non-coherent NoC IP, with FlexNoC and FlexWay
 - ii. Cache-coherent NoC IP, with Ncore
 - iii. Last-level cache, with CodaCache

- b. **IP Deployment Products**
 - i. IP and SoC software, with Magillem and CSRCompiler

In addition to historical annual introductions of new System IP solutions, we regularly develop and deliver updates that provide product enhancements to our customers. We believe the combination of our solutions and the strategic neutrality that we offer to the semiconductor industry positions us well as a reliable, trusted and innovative System IP solution for our customers.

Network-on-Chip IP Products

We believe we offer the semiconductor industry an industry-leading commercially available interconnect IP portfolio.

Our commercially available interconnect IP products currently ship in billions of devices worldwide. Innovative use of proprietary networking techniques for on-chip communications has enabled our industry-proven solutions to deliver higher SoC performance with shorter design schedules, lower research, and development costs, lower SoC unit costs, and reduced project risk when compared to customer-developed internal solutions. Select offerings of our semiconductor IP product portfolio include:

- **FlexNoC and FlexWay:** Silicon-proven, interconnect IP products that have been integrated into hundreds of chip designs. The underlying NoC technology converts on-chip communication signals between IP blocks, such as reads from and writes to memory, into digital packets. Packetizing on-chip communications allow the interconnect to be configured for enhanced performance and simplifies the connections of on-chip IP blocks, similar to how the internet eases the simultaneous connectivity of large numbers of computing devices. FlexWay is targeted at simpler SoC while FlexNoC targets the mainstream application. We also provide optional add-on packages for FlexNoC and FlexWay, such as the resilience package, which provide on-chip data protection that enables customers to meet the ISO 26262 and IEC functional safety standards for markets like automotive, and a large design performance package that addresses highly scalable peer-to-peer on-chip communications required by large SoCs such as those which include machine learning neural networks. FlexNoC and FlexWay started shipping in 2011 and have been incorporated into over 2.8 billion SoCs shipped in production electronic systems.
- **Ncore:** Silicon-proven, cache coherent interconnect IP product that provides scalable, configurable, and area-efficient features for use across multiple end markets. In an SoC, cache coherency is a special data traffic class that requires a corresponding coherent interconnect IP to manage it. In a multiprocessor system using shared memory, each processor has a local cache memory for efficiency, however, it is possible to end up with many copies of shared data in the system. One copy of the data may be in the main memory, whilst other copies may exist in one or more of the processor cache memories. When one of the copies of data is changed, the rest must also reflect that change. Ncore assists the timely propagation of data changes across the SoC in order to maintain cache coherency. Ncore is also more scalable and area-efficient than mesh-based interconnects and is optimized for heterogeneous cache coherent systems and offers multiple configurable snoop filters, multiple configurable proxy caches, and a modular, distributed architecture to provide system architects with the most advanced technology and more degrees of freedom to innovate. Since the initial shipment in 2016, we have launched multiple releases of Ncore which have been designed into various production SoCs for automotive, consumer electronics, industrial, and communications applications. In 2022 we also entered into an Arm automotive agreement, with Arm as the processor IP provider and Arteris as interconnect IP provider for automotive microcontrollers (MCU) and SoCs to service growing customer needs.
- **CodaCache:** CodaCache is a silicon-proven, last-level cache (or local memory) semiconductor IP product, used anywhere in the network-on-chip, for minimization of SoC data latency or improvement of performance. Frequent DRAM accesses waste clock cycles and causes performance to drop. CodaCache keeps data closer to the access point and lowers costs in certain SoC architectures. Design teams and architects can easily configure CodaCache based on area, timing, and other requirements. CodaCache provides the most flexibility of any commercial on-chip last-level cache IP, from setting associativity up to 16 ways, to configuring cache sizes and multiple target ports.

IP Deployment Products

We provide a suite of IP deployment software solutions that enables the packaging, reuse and integration of most types of IP blocks using the IP-XACT (IEEE 1685) standard. This IP deployment software suite of products from Magillem and Semifore acquisitions provides a design environment to any semiconductor and system company from the architecture of the SoC through the delivery of a fully documented and traceable chip design. This software suite manages the assembly of multiple IP blocks into SoC devices, registers configurations of IP blocks, and links design parameters and metadata to documentation. Our IP deployment software is designed to shorten our customers' design schedules and improve SoC engineers' productivity across architects, logic designers, software/firmware developers, verification teams, and documentation teams. Arteris products provide a broad suite of software front-end design capabilities that can accelerate SoC development by providing highly configurable and scalable solutions. Our solutions address packaging, connectivity, register configuration, embedded software, and design software flows and we believe we provide best-in-class front-end design environments based on worldwide IEEE 1685 IP-XACT extensible markup language (XML) standard and SystemRDL language through our ready-made design solutions.

We believe the combination of IP deployment software and SoC interconnect hardware provides our customers with more comprehensive SoC integration capabilities. Our IP deployment technology suite across Magillem, CSRCompiler and Harmony Trace products cover the following key capabilities for IP deployment software and overall SoC development acceleration:

- *Magillem Connectivity*: The Magillem connectivity product shortens and streamlines the system-on-chip (SoC) integration process. Magillem Connectivity allows users to build very complex, correct-by-construction SoC designs. IPs are packaged by the tool using the widely supported IP-XACT standard and can be configured and instantiated to create an SoC design in a single environment whilst ensuring design-data consistency. Magillem Connectivity uses built-in checkers to help automate time-consuming tasks, resulting in efficient and safe design updates or even restructuring of large sections of the design.
- *Magillem Registers and CSRCompiler*: The combination of Magillem and CSRCompiler products addresses hardware-software integration challenges for SoCs, where complex software algorithms control a growing array of specialized processors and hardware accelerators to deliver a robust semiconductor. The hardware/software interface (HSI) provides the technology for software to control this SoC hardware and it forms the foundation of the entire SoC design project. The Magillem Register product and CSRCompiler products automate the creation of this SoC foundation.
- *Harmony Trace*: Harmony Trace provides an enterprise-level server-based application with a web-based user interface (UI) that interfaces to existing software, requirements, documentation, and support systems, creating a system-of-systems that allows visibility of requirements traceability through the entire SoC design flow and product life cycle. This approach to integration between the hardware elements of the design and industry standards provides our users with a unique traceability model.

Customers

We license our products to a global and diverse customer base, including semiconductor manufacturers, OEMs, hyperscale system houses, semiconductor design houses and other producers of electronic systems. We work directly with our customers throughout their design processes and seek to develop long-term, sustainable relationships with them as our technology becomes embedded in their products. As a result, we believe we are well positioned to continue to attract and retain customers, and to continue developing next-generation System IP solutions for their future products. We added 38 net new Active Customers during the year ended December 31, 2022.

In 2022, we had one customer that represented more than 10% of our revenue.

As of December 31, 2022, our net new Active Customers were geographically distributed as follows:

- 13 net new Active Customers based in the Americas;
- 4 net new Active Customers based in Europe and the Middle East; and
- 21 net new Active Customers based in the Asia Pacific region.

Our key customers include Intel and Samsung.

During the fiscal year 2022, our revenue by geographic area based on customer location was as follows:

- 41.1% of our revenue was derived from customers based in the Americas;
- 13.0% of our revenue was derived from customers based in Europe and the Middle East; and
- 45.9% of our revenue was derived from customers based in the Asia Pacific region.

Sales and Marketing

We work closely with our customers throughout the SoC design lifecycle to help them use our System IP solutions to meet their specific needs. It is important to our success that we engage our customers early and collaborate throughout the design cycle. Our support organization is able to communicate the best practices in SoC design practices and receive early insight into customer requirements. This insight often results in new and innovative product features.

System IP sales cycles range from two to nine months or longer. For repeat customers, our sales cycle length is generally shorter.

As of December 31, 2022, we maintained sales offices, sales personnel, or sales representatives in the United States, China, France, South Korea, Japan, Israel, and India. As of December 31, 2022, our sales management had an average of 26 years of sales experience. As of December 31, 2022, we had 33 corporate and field application engineers, which we believe is the largest such support force in the interconnect IP market. Corporate and field application engineers work closely with our customers in both presales and support roles, providing expert advice to our SoC architect and engineering users on how best to use our IP and software to design and implement their SoCs. As a result of these close relationships and detailed information sharing, our application engineers gather early knowledge of future expected customer needs including potential new sales opportunities within the customer and requirements for new capabilities for our products. As a result, we believe our close relationships and technical credibility with our customers provide a competitive advantage.

Our marketing strategy emphasizes thought leadership and educates potential customers about how our products can address their System IP challenges. We use technical papers, and in-person and online events, to highlight our capabilities.

Research and Development

We devote the most of our operating expenses to research and development of interconnect IP and IP deployment solutions and technologies. The development of interconnect IPs for complex SoCs is a challenging task that requires multiple competencies and close contact with customers in order to deliver sophisticated solutions. The development and maintenance of these solutions require:

- Management of an interdisciplinary engineering team with expertise and skill set across a wide range of sciences and domains such as architecture, design, design verification, EDA-class software development, and SystemC modeling, as well as deep understanding of physical design, design methodologies and networking architectures;
- Advanced SoC architectures for handling data coherency and consistency that result in a high-performance implementation with low power;
- Complex design flows and methodologies, as well as specialized languages for generating configurable interconnect IP. The designs require configuration using thousands of parameters that must be meticulously managed with millions of combinations;
- Capability to understand the physical implementation and floorplan of the target SoC in order to generate a design that meets physical implementation requirements in terms of timing, area and power;
- Sophisticated design verification methodologies to ensure the quality of configurable interconnect IP across millions of possible combinations, as well as complex test benches for simulation and emulation;
- In-depth knowledge of common interface protocols, graph theory, data models and graphical user interfaces;
- In-depth knowledge of safety standards including ISO 26262 ASIL B/D for automotive, IEEE 1685 IP-XACT IP standard for IP and SoC packaging, IEEE 1800 UVM verification standard; and
- Support a broad ecosystem of processors suppliers, other IP vendors, SoC design tool software providers, semiconductor foundries, and others.

IP deployment software development is similarly challenging as it requires broad support of the IP packaging standard, IEEE 1685 IP-XACT, and the ability to deliver features and enhancements required as customers deploy ever-changing IP block libraries for their SoC projects, address hardware-software integrations. Our IP deployment software has to conform not only to industry standards, but also to ever-evolving SoC integration methodologies.

Once interconnect IP is designed into customer SoC projects, there are significant switching costs to adopting different interconnect IP and IP deployment solutions, especially in the automotive sector where switching interconnect IP solutions may involve product functional safety re-certification.

Our research and development strategy includes offering customers several product enhancement releases per year, complemented with a planned introduction of at least one new interconnect IP or IP deployment product every year.

We believe we have assembled one of the premier engineering teams for interconnect IP development and IP deployment in the world. As of December 31, 2022, we had 91 engineers devoted to interconnect IP development and 54 engineers devoted to IP deployment software totaling 145 employees. In 2022, we spent \$41.2 million on research and development, which represented 82% of our revenue.

Competition

For interconnect IP, we primarily compete with interconnect solutions developed internally by our SoC customers and potential customers. Many of the largest semiconductor companies have their own interconnect IP development teams which make customer penetration relatively difficult, time-consuming, and expensive. However, we believe that over time the expense and difficulty of developing a broad suite of interconnect IP and IP deployment solutions has the potential to expand the use of commercial SoC integration solutions. In addition, we also compete with third-party providers, including Arm and several smaller companies. While we do compete with Arm in the interconnect IP market, we believe our solutions are complementary to Arm's processor portfolio and protocol deployment and are actively collaborating on joint automotive solutions. We often execute the integration of Arm processors in heterogeneous environments, which can accelerate the deployment of Arm processors. While smaller companies are developing interconnect solutions, we believe that our extensive investment in research and development over many years creates a barrier to entry. Developing interconnect IP solutions that are robust, configurable, and capable of handling multiple functionalities requires deep technology expertise and large research and development investments. We compete based on die area reduction, lower idle power consumption, improved data movement performance such as frequency, latency, and bandwidth, as well as faster time to market. We believe we compete favorably with respect to these factors.

IP deployment similarly competes mainly against internally developed solutions. Commercial competitors consist of smaller companies that generally provide point products rather than complete solutions.

Based on management's experience, we believe that in order to develop a new interconnect IP product, it would take a new entrant in the interconnect IP market three to four years to develop a mature product, two to four years of market development and five to seven years to build a royalty generating customer base.

Intellectual Property and Proprietary Rights

We rely on a combination of intellectual property rights, including patents, trade secrets, copyrights and trademarks, and contractual protections, to protect our core technology and intellectual property. As of December 31, 2022, we had 129 total allowed or issued patents, pending patent applications and non-expired provisional patent applications worldwide. Of these, we had 54 allowed or issued patents, 48 of which are U.S. allowed or issued patents, three of which are allowed or issued China patents, one is a U.K. issued patent, one is a Japan issued patent, and one is a South Korea issued patent. The 54 allowed or issued patents generally expire between July 2035 and December 2041. As of December 31, 2022, we had 75 pending non-provisional and provisional patent application filings, including 37 in the United States, 18 in Europe, 16 in China, three in South Korea and one in Japan. In addition, we have a trademark program covering, where feasible and in accordance with local laws, our products as well as our corporate names and logos.

Our progress in developing our technology and products, and our ability to compete worldwide, is a direct result of our commitment to develop and maintain leadership of our proprietary products and to develop and file to protect our intellectual property. We rely on a combination of patent, trademark, trade secret, and copyright laws, as well as contractual and licensing restrictions to protect the proprietary aspects of our technology. We also take steps to protect against misuse of our licensed products, for example with license keys that limit the time allowed for our licensee customers to use configuration tools to generate hardware description source code that is used in their semiconductor hardware products.

We routinely use non-disclosure agreements, limited evaluation agreements, and substantive license agreements with procedures to assist customer usage while limiting wrongful disclosure or misuse of our intellectual property. In addition, we are committed to developing products not only in the U.S. but in France and other countries, where the country of origin may favorably impact the ability to license our IP solutions and technology in accordance with applicable export laws and regulations. Technological change and customer needs for emerging feature needs in our solutions inspire and motivate our personnel to update and enhance our offerings periodically.

We focus on patent protection beyond the United States in countries and jurisdictions where we determine that such filings will assist the strategic reach and value of our patent portfolio. Patents and other legal IP protections arise when we have conceived or developed novel and valuable new or improved technology relating to our IP solutions, that may affect our customer and our own licensing business outside the U.S. Certain countries in which our IP solutions are or may be developed, manufactured or sold may not have or enforce laws that protect our technology and intellectual property rights to the same extent as under U.S. law.

Material Agreements

Qualcomm Agreements

In connection with an Asset Purchase Agreement by and among Qualcomm Technologies, Inc. and Qualcomm France SARL (collectively, Qualcomm) and us and certain of our subsidiaries dated as of October 9, 2013, pursuant to which we sold to Qualcomm certain assets and intellectual property related to our FlexNoC product (the Purchase Agreement), we and our affiliates retained a non-exclusive, worldwide, perpetual right under patents acquired under the Purchase Agreement to, among other things, manufacture, license and distribute certain FlexNoC products and certain modifications thereto (the Retained Rights). In addition, we and Qualcomm Technologies, Inc. entered into a License Agreement dated October 11, 2013 (the License Agreement) pursuant to which we and our affiliates obtained a license to, among other things, reproduce, use, license, and distribute certain FlexNoC-related works of authorship and technology that were acquired or owned by Qualcomm in connection with the Purchase Agreement for the purpose of enabling us to continue to offer and support FlexNoC products and certain modifications thereto (the Licensed Rights). There is no charge under the Purchase Agreement for our use of the Retained Rights or the Licensed Rights. Our rights in the Retained Rights continue until the last to expire of the relevant patents, and the License Agreement continues in perpetuity, in each case unless terminated as described below.

Qualcomm may terminate the Retained Rights in the event (i) we or our subsidiaries that are party to the Purchase Agreement breach any material terms of the Purchase Agreement applicable to the Retained Rights or any material terms of the License Agreement and fail to cure any such breach within 90 days after notice of such breach from Qualcomm, or (ii) we or any of our affiliates initiate a claim of patent infringement against Qualcomm or its affiliates (excluding such claims that are counterclaims in proceedings initiated by Qualcomm or its affiliates) and does not withdraw such claim within 30 days after Qualcomm's written request to do so. Qualcomm may terminate the License Agreement in the event we breach any material terms of the License Agreement or any material terms of the Purchase Agreement applicable to the Retained Rights and fail to cure such breach within 90 days after notice of such breach from Qualcomm. Qualcomm may also terminate rights granted under the License Agreement to a certain development environment used in connection with our FlexNoC product (which could effectively preclude us from continuing to enhance our FlexNoC product and adversely affect our FlexNoC business) in the event of a change of control of our company (as defined in the License Agreement) which would effectively include, in a transaction or series of related transactions, a sale of our company, or the sales of securities by us or our stockholders that would result in the stockholders and option holders of our company as of the date of the License Agreement not retaining beneficial ownership of more than 50% of our company. We believe that, as we have and continue to deliver new products since the date of the License Agreement, such as our range of IP deployment products, Ncore cache coherent interconnect, CodaCache last-level cache, and CSRCompiler physical awareness capabilities, the importance to our business and product portfolio of the FlexNoC development environment will decrease over time.

We may not assign the License Agreement without Qualcomm's written consent (and a change of control of our company shall be considered an assignment for the purposes of such prohibition) except that we may assign the License Agreement to an acquirer of our business that consists of licensing certain FlexNoC products, and we may only assign the Retained Rights to an entity to whom we have assigned the License Agreement.

Governmental Regulation

We are subject to regulation by various governmental agencies in the United States and other jurisdictions in which we operate. These laws and regulations (and the government entities, regulators, and agencies responsible for their enforcement) in the United States cover among other things: radio frequency emission regulatory activities (Federal Communications Commission); anti-trust regulatory activities (Federal Trade Commission and Department of Justice); insider trading, anti-bribery, and anti-corruption (Department of Justice), consumer protection (Federal Trade Commission); import/export regulatory activities (Department of Commerce and Department of Treasury); product safety regulatory activities (Consumer Products Safety Commission); worker safety (Occupational Safety and Health Administration); environmental protection (Environmental Protection Agency and similar state and local agencies); employment matters (Equal Employment Opportunity Commission); and federal and state tax and other regulations by a variety of regulatory authorities in each of the areas in which we conduct business. Our operations are also subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended (the FCPA), the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, as well as the anti-corruption, anti-bribery, and anti-money laundering laws in the U.S. and other countries where we conduct business.

In addition, certain of our products, including our IP interconnect and other solutions and technology, are subject to U.S. export controls, including the U.S. Department of Commerce's Export Administration Regulations (EAR) and economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls (OFAC). Other products are subject to French export controls. These regulations may limit the export of our products and technology, and the provision of our services outside of the United States and/or France, or may require export authorizations, including by license, a license exception, or other appropriate government authorizations and conditions, including annual or semi-annual reporting. Export control and economic sanctions laws may also include prohibitions on the sale or supply of certain of our products to embargoed or sanctioned countries, regions, governments, persons, and entities. The export and re-export of our products and technology and the provision of services, including by our partners, must comply with these laws, or else we may be adversely affected through reputational harm, government investigations, penalties, and a denial or curtailment of our ability to export our products and technology. In March 2021, we submitted an initial voluntary self-disclosure (VSD) to the Bureau of Industry and Security (BIS), noting potential violations of the EAR. We submitted a final VSD to BIS on July 23, 2021. In our VSD submission, we identified two parties included on the BIS Entity List. Our VSD is currently under review at BIS. While BIS has historically closed a significant majority of voluntary self-disclosures with warning letters and no monetary penalty because, in part, BIS gives great weight and mitigating credit to companies that submit a VSD, we cannot rule out the possibility that BIS could impose a civil monetary penalty. In addition, BIS also has the power to impose a denial of export privileges, although it is not commonly imposed in cases involving VSDs. We believe it is premature and speculative to provide further guidance on the likelihood that a civil penalty or other penalty would or could be imposed, or the amount and nature of such penalty, because BIS has discretion whether to issue a warning letter or proposed charging letter. With respect to government authorizations, we have no pending export license requests to BIS or any other government agency, and no export licenses are currently required to export our products from the United States or other countries to countries where we do business.

Complying with export control and sanctions laws may be time-consuming and may result in the delay or loss of sales opportunities. Although we take precautions to prevent our products and technology from being provided in violation of such laws, our products and technology have previously been, and could in the future be, provided inadvertently in violation of such laws, despite the precautions we take. If we are found to be in violation of U.S. sanctions or export control laws, it could result in substantial fines and penalties for us and the individuals working for us. Changes in export or import laws or sanctions policies may adversely impact our operations, delay the introduction and sale of our products in international markets, or, in some cases, prevent the export or import of our products and technology to certain countries, regions, governments, persons, or entities altogether, which could harm our business.

From time to time, we have adopted and will continue to adopt remedial measures in response to government regulation. For example, we have adopted several remedial measures prior to, in connection with and following the initial notification of voluntary self-disclosure we submitted to BIS. These compliance enhancements were developed and implemented in consultation with outside counsel specializing in U.S. trade compliance. These steps have included annual basic export compliance training within our company, updating our written export control policies and procedures, and adopting a revised export compliance manual in 2021. We have provided export awareness training for relevant personnel including in 2022 and 2021. We previously provided our sales employees worldwide with training in basic export compliance. We engaged third-party vendor software to assist us with an ongoing screening of new and existing customers, third-party agents or representatives, suppliers, and other vendors against U.S., France and several other jurisdictions' prohibited or restricted party lists. We screen all customers against applicable lists of denied or restricted parties, including the Entity List administered by BIS as well as the list of Specially Designated Nationals and Blocked Persons, administered by the Treasury Department's Office of Foreign Assets Control.

For a discussion of the various risks we face from regulation and compliance matters, see "Risk Factors—Risks Related to Our Business and Industry—We are subject to governmental regulation and other legal obligations, particularly related to privacy, data protection, and information security, and consumer protection laws across different markets where we conduct our business. Our actual or perceived failure to comply with such obligations could harm our business," "Risk Factors—Risks Related to Legal, Regulatory, Accounting and Tax Matters—Our failure to comply with the large body of laws and regulations to which we are subject could materially harm our business," "Risk Factors—Risks Related to Legal, Regulatory, Accounting and Tax Matters—Our failure to comply with the Foreign Corrupt Practices Act, other applicable anti-corruption and anti-bribery laws, and applicable anti-money laundering laws could subject us to penalties and other adverse consequences," "Risk Factors—Risks Related to Legal, Regulatory, Accounting and Tax Matters—We are subject to government regulation, including import, export and economic sanctions laws and regulations that may expose us to liability and increase our costs," "Risk Factors—Risks Related to Legal, Regulatory, Accounting and Tax Matters—We will lose sales if we are unable to obtain government authorization to export certain of our products, and we will be subject to legal and regulatory consequences if we do not comply with applicable export control laws and regulations."

Human Capital Resources

As of December 31, 2022, we had 245 full-time equivalent employees as follows:

Function	Number
Research and development	151
Sales and marketing	52
Administration	42
Geographic Distribution	
United States	111
France	113
China	9
South Korea	5
Japan	5
Elsewhere	2

We consider relations with our employees to be good and have never experienced a work stoppage. None of our employees are either represented by a labor union, although our employees in France are subject to a collective bargaining agreement.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and additional employees. The principal purposes of our equity incentive plans are to attract, retain and motivate selected employees, consultants and directors through the granting of stock-based compensation awards and cash-based performance bonus awards.

Corporation Information

We were incorporated in the State of Delaware in April 2004. Our principal executive offices are located at 595 Millich Dr. Suite 200 Campbell, CA 95008. Our telephone number is (408) 470-7300, and our website address is www.arteris.com. The information contained on, or that can be accessed through, our website is not incorporated by reference in this report and does not form a part of this report. You should not consider the information contained on our website to be part of this report in deciding whether to purchase shares of our common stock. Our common stock is traded on the Nasdaq Stock Market under the symbol "AIP".

Available Information

Our website address is www.arteris.com. Information found on, or accessible through, our website is not a part of, and is not incorporated into, this Annual Report on Form 10-K. We file electronically with the SEC our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. We make available on our website at www.arteris.com, free of charge, copies of these reports and other information as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. Before making your decision to invest in shares of our common stock, you should carefully consider and read carefully all of the risks described below, together with the other information contained in this report, including our financial statements and the related notes and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this report. We cannot assure you that any of the events discussed below will not occur. These events could have a material and adverse impact on our business, financial condition, results of operations and prospects. Unless otherwise indicated, references to our business being harmed in these risk factors will include harm to our business, reputation, financial condition, results of operations, revenue and future prospects. In such event, the trading price of our common stock could decline, and you could lose all or part of your investment. Additional risks and uncertainties not presently known to us or not believed by us to be material may also negatively impact us.

Risks Related to Our Business and Industry

We face significant competition from larger companies and third party providers that may deploy their resources so they can develop their IP solutions internally.

We are engaged in a competitive segment of the global semiconductor industry. Our competitive landscape is characterized by competition from companies that have greater resources than us. A variety of factors could adversely impact our ability to compete, including rapid technological change in product design and manufacturing, customers that make purchase decisions based on a mix of factors of varying importance and continuous declines in average selling prices (ASPs). We compete principally on the basis of technology, product quality and features, license, royalty and usage terms, post-contract customer support, interoperability among products, and price and payment terms.

We operate in industries characterized by rapidly changing technologies as well as technological obsolescence. The introduction of new products by our competitors or our failure to timely develop new or enhanced products or technologies in response to changing market demand, whether due to technological shifts or otherwise, could result in the loss of customers and decreased revenue and have an adverse effect on our business, financial condition, and results of operations.

Often, we compete against larger companies that possess substantial financial, technical, research and development and engineering resources that can be deployed so they can develop their IP solutions internally. In addition, we compete against other third-party providers of IP integration solutions, such as Openedges Technologies Inc. and Arm Limited, that similarly possess substantial financial, technical, research and development and engineering resources. In certain cases, competitive companies may be supported by local or international government funding and similar resources. Varying combinations of these resources provide advantages to these competitors that enable them to influence industry trends and the pace at which they adapt to these trends. A strong competitive response from one or more of our competitors to our marketplace efforts, or a shift in customer preferences to competitors' products, could result in increased pressure to lower our prices more rapidly than anticipated, increased sales and marketing expense, and/or market share loss. The consolidation of our competitors or collaboration among our competitors to deliver more comprehensive offerings than they could individually, may also impact our ability to compete effectively. To the extent our revenue is negatively impacted by competitive pressures and reduced pricing, our business could be harmed.

Our ability to compete in our market is subject to a variety of factors, many of which are beyond our control. The occurrence of any of the below could adversely affect our ability to compete and harm our business:

- Our ability to anticipate and lead critical product development cycles and technological shifts as driven by our target markets, to innovate rapidly and efficiently and to improve our existing solutions.
- Whether any competitor substantially increases its engineering and marketing resources to compete with us in the semiconductor IP deployment software technology arena.
- Whether a new entrant with substantially greater resources and/or supported by governmental resources decides to enter the markets in which we compete.
- Whether any existing or new competitor bundles its technologies into one package at a discounted price that would make it uneconomical for our customers to license our products separately.
- The challenges of developing, or acquiring externally developed, technology solutions that are adequate and competitive in meeting the rapidly evolving requirements of next-generation design challenges.
- Our ability to compete on the basis of payment and pricing features and terms.

- Decisions by semiconductor companies, system companies, device or other end product producers, and/or OEMs to develop IP development internally, rather than license IP from outside vendors due to budget constraints or excess engineering capacity.
- Actions by regulators or governmental entities to impose license requirements, limit product availability, limit trade and exportability of our products, the features or contractual terms that either we or our customers can apply to product and service offerings, or to affect monetary policy.
- Actions by regulators or governmental entities to modify or augment tax treatment of our product and service offerings.
- The impact of global and regional inflation on ours and our customers' profitability and expansion plans due to among other effects of inflation, increases in wages, availability of capital, salaries, operating expenses, and costs of insurance, benefits and medical coverage.
- The potential effects of geopolitical conflicts, such as the military conflict between Russia and Ukraine, including retaliatory and regulatory actions, on purchasing, development, sales and innovation responses and trends in response to such conflicts.
- Competition, embargoes, sanctions, boycotts and/or social unrest.
- Local or international economic headwind trends that may lead to recessions, economic slowdowns or sudden changes in economic needs of regions and consumers.
- Silicon chip supply chain and shipment volume restrictions on our customers and their end customers that will impact the amount of royalties payable to us.

We may be unable to reduce the cost of our products sufficiently to compete effectively against our competitors. Our cost reduction efforts may not allow us to keep pace with competitive pricing pressures and/or other economic factors including inflation and customer and end market supply chain constraints which could adversely affect our gross margins and ability to meet customer demand. To the extent we are unable to reduce the prices of our products and remain competitive, our revenue will likely decline, resulting in further pressure on our gross margins, which could harm our business. Many other companies in the IP interconnect space have not been able to continue as a going concern due to intense competition and low margins. See "Business—Competition".

We have a history of net losses, and we may not achieve or maintain profitability in the future.

We have incurred net losses in certain periods historically. We incurred a net loss of \$27.4 million in 2022 and \$23.4 million in 2021, which has resulted in an accumulated deficit of \$66.4 million and \$39.0 million as of December 31, 2022 and 2021, respectively. We have spent significant funds on organizational and start-up activities, to recruit engineers and other employees and to support our research and development. The net losses we incur may fluctuate significantly from quarter to quarter and may increase as a result of geopolitical and market fluctuations, inflation, slow downs and/or recessionary pressures, the COVID-19 pandemic and other global economic factors.

Our long-term success is dependent upon our ability to successfully market our interconnect IP and IP deployment solutions, develop new interconnect IP and IP deployment solutions, earn revenue, obtain additional capital when needed and, ultimately, to maintain profitable operations. We will need to generate significant additional revenue to achieve profitability. It is possible that we will not achieve profitability or that, even if we do achieve profitability, we may not maintain or increase profitability in the future. Our failure to achieve or maintain profitability could negatively impact the value of our common stock.

Because our IP solutions are components of end products, if semiconductor, system producers and/or end product producer companies in the automotive market, enterprise computing market, communications market, consumer electronics market, and industrial market do not incorporate our solutions into their end products or if the end products of our customers do not achieve market acceptance, we may not be able to generate adequate license sales and royalty income from our products.

Our IP solutions include technology that manages on-chip communications in SoC semiconductor devices. We do not license our IP solutions and deployment tools directly to end-users; we license our technology primarily to companies in the automotive market, enterprise computing market, communications market, consumer electronics market, and industrial market, who then incorporate our technology into the products they sell. As a result, we rely on our customers to incorporate our technology into their end products at the design stage. Once a company incorporates a competitor's technology or develops the technology internally and incorporates it into its end product, it becomes significantly more difficult for us to sell our technology to that company because changing suppliers involves significant cost, time, effort and risk for the company. As a result, we may not achieve targeted customer acceptance despite incurring significant expenditures to develop new technology.

Moreover, even after customers agree to incorporate our technology into their end products, the design cycle is long and may be delayed due to factors beyond our control, which may result in our customers' product not reaching the market until long after our initial design win, which we define as winning the competitive bid selection process. From initial product design-in to volume production, many factors could impact the timing and/or amount of sales actually realized from the design-in. These factors include, but are not limited to, changes in the competitive position of our customers' product, our customers' financial stability, and our customers' ability to ship products under our customers' original schedule. Moreover, several external factors affect our customers' ability and willingness to start their own new product designs and to manufacture and ship their products, including target product market conditions, our customers' financial stability, our customers' competitive positioning and external economic conditions (such as but not limited to inflation, recessions, customer and end market supply chain constraints, geopolitical conflict, sanctions and competition) that may prolong the customers' decision-making process and design cycle.

Further, we do not control the business practices of our customers and we do not influence the degree to which they promote, market or set their product pricing. We therefore cannot assure you that our customers will devote satisfactory efforts to promote their end products, which incorporate our IP technology and deployment solutions.

We depend on growth and economic stability in the end markets that use our products. Any slowdown in the growth and economic stability of these end markets could harm our business.

Our continued success will depend in large part on general economic growth and stability, and growth and stability within our target markets in the automotive market, enterprise computing market, communications market, consumer electronics market, and industrial market. Factors affecting these markets could seriously harm our customers and/or end customers and, as a result, harm us, examples of which include:

- Reduced sales of our customers' and/or end customers' products.
- The effects of catastrophic and other disruptive events at our customers' and/or end customers' offices or facilities including, but not limited to, natural disasters, telecommunications failures, cyber-attacks, terrorist attacks, pandemics, epidemics or other outbreaks of infectious disease, including the current COVID-19 pandemic, breaches of security or loss of critical data.
- Increased costs associated with potential disruptions to our customers' and/or end markets' supply chain and other manufacturing and production operations.
- The deterioration of our customers' and/or end customers' financial condition.
- Delays and project cancellations as a result of design flaws in the products developed by our customers and/or end customers.
- The inability of our customers and/or end customers to expand or dedicate the resources necessary to promote and commercialize their products.
- The inability of our customers and/or end customers to adapt to changing technological demands resulting in their products becoming obsolete.
- The failure of our customers' and/or end customers' products to achieve market success and gain broad market acceptance.
- Disruption and uncertainty caused by new developments in export and related regulations.
- Regional and global effect of inflation or other adverse economic conditions, such as recessions or economic slowdowns, resulting in delays or cancellations of new product design starts.
- Adverse impact of multiple interest rate increases implemented and forecasted by the U.S. Federal Reserve.

Any slowdown in the growth of these end markets, or the emergence of economic instability in these end markets, could harm our business. For example, a significant element of our growth strategy depends on the increasing adoption of vehicles with more sophisticated automated driving, which will likely require more complex SoCs. If anticipated demand in the end market for these vehicles does not materialize, whether due to consumer demand not materializing, regulatory interventions delaying the deployment of automated driving, or the emergence of economic instability in end markets arising from factors such as inflationary trends, deteriorating purchasing power, trade or supply chain disruptions and regional and/or worldwide chip shortages or excess supply, demand fluctuations, unemployment spikes, labor shortages or end market reactions to regional or global geopolitical uncertainties or conflicts, or other factors beyond our control, it would adversely affect demand for our products from customers and royalty revenue and impact our ability to execute our growth strategy.

We depend on market acceptance of third-party semiconductor IP.

The semiconductor IP industry is a relatively small and emerging industry. Our future growth will depend on the level of market acceptance of our third-party licensable IP model, the variety of IP offerings available on the market and the shift in customer preference away from in-house development of semiconductor IP technologies and IP deployment software. Furthermore, the third-party licensable IP model is highly dependent on the market adoption of new services and products, including in the automotive market, enterprise computing market, communications market, consumer electronics market, and industrial market. Such market adoption is important because the increased cost associated with ownership and maintenance of the more complex architectures in SoCs needed for the advanced services and products and time to market pressures on our customers may motivate companies to license third-party IP rather than design them in-house.

The trends that would enable our growth are largely beyond our control. Semiconductor customers also may choose to adopt a multi-chip, off-the-shelf chip solution versus licensing or using highly-integrated chipsets that embed our technologies or use our deployment software. If these market shifts do not materialize or third-party semiconductor IP does not achieve market acceptance, our business could be harmed.

The success of our business depends on sustaining or growing our licensing revenue and the failure to achieve such revenue would lead to a material decline in our results of operations.

Our revenue consists largely of technology license fees and other fees and royalties paid for access to our patented technologies, existing technology and other development and support services we provide to our customers. Our ability to secure and renew the licenses from which our revenue is derived depends on our customers adopting our technology and using it in the products they sell. Once secured, royalty revenue may be negatively affected by factors within and outside our control, including reductions in our customers' sales prices, sales volumes, our failure to timely complete engineering deliverables and the customers' negotiated contract terms.

In addition, our customer acquisition cycle for new licenses and license renewals for existing licensees can be lengthy, typically between two to nine months, and can also be costly and unpredictable. Given the length of the sales cycle, we may incur costs in any particular financial period before any associated revenue stream begins, if at all. We cannot provide any assurance that we will be successful in signing new license agreements or renewing existing license agreements on equal or favorable terms or at all. If we do not achieve our revenue goals, our results of operations could decline.

The nature of the design win process requires us to incur significant expenses without any guarantee that research and development and sales efforts will generate revenue, which could adversely affect our financial results.

We focus on winning competitive bid selection processes, called "design wins," to incorporate our IP interconnect and other solutions in our customers' products. These lengthy technical and commercial selection processes may require us to incur significant expenditures and dedicate valued engineering resources to the development or enhancement of our IP interconnect and other solutions without any assurance that our bids will be selected as the design wins. If we incur such expenditures and fail to be selected in the bid selection process, our operating and financial results may be adversely affected. Further, because of the significant costs associated with qualifying new suppliers, customers are likely to use the same or an enhanced version of semiconductor IP from existing suppliers across a number of similar and successor products for a lengthy period of time. As a result, if we fail to secure an initial design win for any of IP interconnect and other solutions to any particular customer, we may lose the opportunity to make future sales of those solutions to that customer for a significant period of time, or at all, and we may experience an associated decline in revenue relating to those products. Because we expect the ASPs of our products may decline over time, we consider design wins to be critical to our future success and anticipate that for our newer products, we are and will remain highly dependent on revenue from newer design wins. Failure to achieve initial design wins may also weaken our position in future competitive selection processes because we may not be perceived as an industry leader.

Further, a significant portion of our revenue in any period may depend on a single product design win with a large customer. As a result, the loss of any key design win or any significant delay in the ramp of volume production of the customer's products into which our product is designed could harm our business. We may not be able to maintain sales to our key customers or continue to secure key design wins for a variety of reasons, and our customers can stop incorporating our products into their product offerings with limited notice to us and suffer little or no penalty.

The loss of a key customer or design win, a reduction in sales to any key customer, a significant delay or negative development in our customers' product development plans, or our inability to attract new significant customers or secure new key design wins could harm our business.

Even if we succeed in securing design wins for our IP interconnect and other solutions and our IP deployment solutions, we may not generate timely or sufficient margins or margins from those wins and our financial results could suffer.

After incurring significant design and development expenditures and dedicating engineering resources to achieve a single initial design win for an IP interconnect or other solution, a substantial period of time generally elapses before we generate meaningful revenue from royalties relating to such solution, if at all. The reasons for this delay include, among other things, the following:

- Changing customer requirements, resulting in an extended development cycle for the product.
- Delay in the ramp-up of volume production of the customer's products into which our solutions are designed.
- Delay or cancellation of the customer's product development plans.
- Market or competitive pressures to reduce the selling price of the customer's end-product.
- The discovery of design flaws, defects, errors or bugs in the products, whether or not those defects, errors or bugs are related to our IP interconnect and other solutions that delay the customer from finishing the product in which our IP solution is incorporated.
- Lower than expected acceptance of the customers' end-products.

Moreover, as noted above, even if a customer selects our IP interconnect and other solutions, we cannot guarantee that this will result in any royalty or future licensing revenue, as the customer may ultimately change or cancel its product plans, or the customer's efforts to market and sell its product may not be successful.

We continually pursue new IP interconnect and other solutions and IP deployment technology initiatives, and if we fail to successfully carry out these initiatives, our business could be harmed.

As part of the evolution of our business, we have made substantial investments to develop IP interconnect and other solutions, IP deployment software solutions and enhancements to existing technologies we license through our acquisitions and research and development efforts. Continuing to meet the requirements of smaller die size, lower power consumption, a higher frequency of operation and management of critical net latency in a timely and cost-effective manner for chips used in the automotive market, enterprise computing market, communications market, consumer electronics market, and industrial market have resulted in increased SoC design complexity for chips used in these markets. If we are unable to meet these demands for increased SoC design complexity, if we are unable to anticipate technological changes in our industry by introducing new or enhanced IP interconnect and other solutions and/or IP deployment solutions in a timely and cost-effective manner, or if we fail to introduce new technologies that meet market demand, we may lose our competitive position, our products may become obsolete, and our business could be harmed.

Moreover, new technologies and products may not be profitable, and even if they are profitable, operating margins for new products and businesses may not be as high as the margins we have experienced historically or originally anticipated.

Additionally, from time to time, we invest in expansion into adjacent markets, including the acquisition of Magillem and our entry into the IP deployment solutions market. Although we believe these solutions are complementary to our IP interconnect solutions, we have less experience and a more limited operating history in offering software that, among other things, manages register configurations of IP blocks, assembles multiple IP blocks into SoC platforms and links design parameters and metadata to documentation, and our efforts in this area may not be successful. Our success in these product areas depend on a variety of factors, including the following:

- Our ability to continue to attract new customers in industries in which we have less experience.
- Our successful development of sales and marketing strategies that meet customer requirements.
- Our ability to accurately predict, prepare for, and promptly respond to technological developments in existing and new fields.
- Our ability to compete with new and existing competitors, many of which may have more financial resources, industry experience, brand recognition, relevant IP rights, and/or more established customer relationships than we currently do, and they could include free and open-source solutions that provide similar IP deployment solutions.
- Our ability to continually balance our investment in adjacent markets with investment in our existing products and services.
- Our ability to attract and retain employees with expertise in new or emerging fields affecting our business.

Difficulties in any of our new product development efforts or our efforts to enter adjacent markets, including delays or disruptions due to factors outside of our control such as any adverse impact resulting from market and inflationary pressures, export and trade controls, and the COVID-19 pandemic, could harm our business.

A fundamental shift in technologies, the regulatory climate or demand patterns and preferences in our existing product markets or the product markets of our customers or end-users could make our current products obsolete, prevent or delay the introduction of new products or enhancements to our existing products or render our products irrelevant to our customers' needs. If our new product development efforts fail to align with the needs of our customers, including due to circumstances outside of our control like a fundamental shift in the product markets of our customers and end users or regulatory changes, our business could be harmed.

Further, we design our IP interconnect solutions to function optimally with various industry-standard core IP transaction protocols including AMBA, ACE, CHI and AXI. Should developers limit access to their IP protocol information or cease cooperation with us for any reason, our ability to support certain processors and IP protocols would be delayed, which could harm our business.

We may have to invest more resources in research and development than anticipated, which could increase our operating expenses and negatively affect our operating results.

We currently devote substantial resources to the research and development of new and enhanced interconnect IP and IP deployment solutions. However, we may be required to devote more resources than anticipated to address design requirements for specific target markets, new competitors, technological advances in the semiconductor industry or by competitors, our acquisitions, our entry into new markets, or other competitive factors. If we are required to invest significantly greater resources than anticipated without a corresponding increase in revenue, our operating results could decline. Additionally, our periodic research and development expenses may be independent of our level of revenue, which could negatively impact our financial results. We expect these expenses to be significant and increase in the foreseeable future as our technology development efforts continue, and there can be no guarantee that our research and development investments will result in products that create additional revenue.

We may also decide to increase our research and development investment to seize customer or market opportunities, which could negatively impact our financial results.

We continue to experience hiring challenges, including for engineering resources.

Product errors or defects could expose us to liability and harm our reputation and we could lose market share.

Software products frequently contain errors or defects, especially when first introduced, when new versions are released, or when integrated with technologies developed by acquired companies. Product errors, including those resulting from third-party suppliers, could negatively affect the performance or interoperability of our IP interconnect and IP deployment solutions, could delay the development or release of new solutions or new versions and could adversely affect market acceptance or perception of our technology. In addition, any allegations of manufacturability issues resulting from use of our IP interconnect and other solutions or semiconductor design efficiency issues resulting from our IP deployment solutions could, even if untrue, adversely affect our reputation and our customers' willingness to license our technology. Any such errors or delays in releasing new products or new versions of products or allegations of unsatisfactory performance could cause us to lose customers, increase our service costs, subject us to liability for damages and divert our resources from other tasks, any one of which could harm our business and operating results.

If we fail to offer high-quality support, our reputation could suffer.

Interconnect IP technology is complex, and our customer support is critical for the successful deployment of our IP in our customers' designs, and we maintain a team of corporate and field application engineers in our global support organization. High-quality support is important for customer retention, and the importance of our support function will increase as we expand our business and pursue new customers. If we do not help our customers quickly resolve issues and provide effective ongoing support, our ability to maintain and expand our offerings to existing and new customers could suffer, and our reputation with existing or potential customers could suffer.

Our dependence on international customers and operations also subjects us to a range of other additional regulatory, operational, financial and political risks that could adversely affect our financial results.

We derived 59.3% and 56.9% of our revenue for 2022 and 2021, respectively, from sales to customers outside of the United States. In particular, we derived 28.8% and 27.1% of our revenue in 2022 and 2021, respectively, from customers located in China. We expect our revenue from China to decrease due to the applicable U.S. government trade restrictions. As a result, the economic, political, legal and social conditions in China could harm our business. In addition, we have offices globally with our sales and research and development being conducted in offices located in the San Francisco Bay Area, Texas, France, China, South Korea and Japan. Moreover, conducting business outside the United States subjects us to a number of additional risks and challenges, including:

- Changes in a specific country's or region's political, regulatory or economic conditions.
- Imposition of significant new export control regulations targeting the Chinese semiconductor industry and technical support of the Chinese semiconductor industry, tariffs and other barriers, restrictions and regional stability measures, including as between U.S.-China.
- A pandemic, epidemic or other outbreak of an infectious disease, including the current COVID-19 pandemic, which may cause us or our distributors, vendors and/or customers to temporarily suspend our or their respective operations in the affected city or country or completely.
- Compliance with a wide variety of domestic and foreign laws and regulations (including those of municipalities or provinces where we have operations) and unexpected changes in those laws, export and trade controls, and regulatory requirements, including uncertainties regarding taxes, social insurance contributions and other payroll taxes and fees to governmental entities, tariffs, quotas, export controls, export licenses and other trade barriers.
- Unanticipated restrictions on our ability to sell to foreign customers where sales of products and the provision of services may require export licenses or are prohibited by government action, unfavorable foreign exchange controls and currency exchange rates.
- Potential for substantial penalties and litigation related to violations of a wide variety of laws, treaties and regulations, including labor regulations, export control and anti-corruption regulations (including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act).
- Difficulties and costs of staffing and managing international operations across different geographic areas, time zones and cultures.
- Changes in diplomatic and trade relationships.
- Potential political, legal and economic instability, armed conflict, and civil unrest in the countries in which we and our customers are located.
- Difficulty and costs of maintaining effective data security.
- Inadequate protection of our IP.
- Nationalization and expropriation.
- Restrictions on the transfer of funds to and from foreign countries, including withholding taxes and other potentially negative tax consequences.
- Unfavorable and/or changing foreign tax treaties and policies.
- Increased exposure to general market and economic conditions inside and outside of the United States.
- Currency exchange rate fluctuations and the resulting effect on our revenue and expenses, and the cost and risk of entering into hedging transactions if we chose to do so in the future.
- Increased regulatory uncertainties with respect to our wholly foreign-owned enterprise operating in China and any joint ventures we may form or contribute IP or other resources to in the future.
- Trends such as global and regional inflation, supply shortages and supply chain disruptions, geopolitical conflicts and retaliatory actions and regulations affecting or relating to regions such as but not limited to Ukraine, Russia, Eastern Europe or in the Greater China region, may lead to the deterioration of our immediate customers' and/or end market customers' ability and/or willingness to purchase, use, develop, market or sell products or solutions that incorporate or are made while using our products.

These factors, individually or in combination, could impair our ability to effectively operate one or more of our foreign facilities or deliver our semiconductor IP or IP deployment solutions, result in unexpected and material expenses, or cause an unexpected decline in the demand for our products in certain countries or regions. Our failure to manage the risks and challenges associated with our international business and operations could harm our business.

Downturns or volatility in general economic conditions, including as a result of political and economic conditions in the countries in which we conduct business, the current COVID-19 pandemic or any other outbreak of an infectious disease, could harm our business.

Our revenue, gross margin, and ability to achieve and maintain profitability depend significantly on general economic conditions and the demand for products in the markets in which our customers compete. Weaknesses in the global economy and financial markets, including the current weaknesses resulting from the ongoing COVID-19 pandemic, and any adverse changes in general domestic and global economic conditions that may occur in the future, including any recession, economic slowdown or disruption of credit markets, may lead to, lower demand for products that incorporate our solutions, including in the automotive market, enterprise computing market, communications market, consumer electronics market, and industrial market. A decline in end-user demand can affect our customers' demand for our products, the ability of our customers to obtain credit and otherwise meet their payment obligations and the likelihood of customers canceling or deferring existing orders. Our business could be harmed by such actions.

Because we conduct business, have offices in and derive revenue from customers in China, our business performance may be affected by increased political tensions and changes in China's political, social and economic environment. For example, political instability resulting from changes in the relationship between the United States and China could negatively impact our business. Any significant armed conflict related to this matter would be expected to materially and adversely damage our business. Moreover, the role of the Chinese government in the Chinese economy is significant. Chinese policies toward economic liberalization, and laws and policies affecting technology companies, foreign investment, currency exchange rates, taxes and other matters could change, resulting in greater restrictions on our ability and our suppliers' ability to do business and operate facilities in China. If any of these changes were to occur, our business could be harmed and our stock price could decline.

Any disruption in the credit markets, including as a result of the current COVID-19 pandemic, could also impede our access to capital. If we have limited access to additional financing sources, we may be required to defer capital expenditures or seek other sources of liquidity, which may not be available to us on acceptable terms or at all. All of these factors related to global economic conditions, which are beyond our control, could harm our business. For a more detailed discussion of the COVID-19 pandemic and its recent and potential impact on our business, see “—Our business has been, and may continue to be, adversely affected by health epidemics, pandemics and other outbreaks of infectious disease, including the current COVID-19 pandemic.”

The cyclical nature of the semiconductor industry, including significant supply chain disruption, may limit our ability to maintain or improve our revenue.

The semiconductor industry is highly cyclical and is prone to significant downturns from time to time. Cyclical downturns can result from a variety of market forces including constant and rapid technological change, rapid product obsolescence, price erosion, evolving standards, short product life cycles and wide fluctuations in product supply and demand, all of which can result in significant declines in semiconductor demand. We have experienced downturns in the past and may experience such downturns in the future. For example, the industry experienced a significant downturn in connection with the most recent global recession in 2008, and further experienced downturns in 2020 and 2022, which may be prolonged as a result of the economic impact of the COVID-19 pandemic. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and accelerated erosion of average selling prices. Recently, downturns in the semiconductor industry have been attributed to a variety of factors, including the COVID-19 pandemic, ongoing trade disputes among the United States and China, weakness in demand and pricing for semiconductors across applications and excess inventory.

Recent downturns have directly impacted our business, as has been the case with many other companies, suppliers, distributors and customers in the semiconductor industry and other industries around the world, and any prolonged or significant future downturns in the semiconductor industry could harm our business. Conversely, significant upturns may suppress customer shipments of royalty-bearing products incorporating our IP solutions due to our customers having limited access to third-party foundry and assembly capacity. In the event of such an upturn, we may not be able to expand our workforce and operations in a sufficiently timely manner, procure adequate resources, or locate suitable third-party suppliers or other third-party subcontractors to respond effectively to changes in demand for our existing products or to the demand for new products requested by our customers, and our business could be harmed.

The semiconductor industry has also faced significant global supply chain issues as a result of the impact of the COVID-19 pandemic (both on demand for devices to enable wireless connectivity and remote environments and on supply from the related imposition of government restrictions on staffing and facility operations) as well as other trends such as the increasing demand for semiconductors in automobiles, which together have resulted in the inability of fabrication plants to produce sufficient quantities of chips to meet demand, supply chain shortages and other disruptions. Numerous factors, such as the ongoing pandemic or further trade tensions between the U.S. and China, may prolong or deepen these challenges faced by the industry.

Our revenue has been concentrated among a small number of licensees and customers, and if we lose any of these customers and fail to replace them, our revenue may decrease substantially.

A significant amount of our revenue is derived from a limited number of customers. As of December 31, 2022, sales to Intel Corporation accounted for 24% of our revenue. We expect that a relatively small number of customers will continue to account for a substantial portion of our revenue for the foreseeable future.

As a result of this revenue concentration, our results of operations could be adversely affected by the decision of a single key licensee or customer to cease using our technology or products or by a decline in the number of products that incorporate our technology that are sold by a single licensee or customer or by a small group of licensees or customers. We must continue to obtain new significant licensees and to increase our revenue and grow our business.

Failure to effectively expand our sales and marketing capabilities could harm our ability to increase our customer base and achieve broader market acceptance of our products.

Our ability to increase our customer base and achieve broader market acceptance of our products and platform capabilities will depend to a significant extent on our ability to expand our global sales and application engineering organization. We plan to continue expanding our sales force, both domestically and internationally. We also plan to dedicate significant resources to sales and marketing programs. All of these efforts will require us to invest significant financial and other resources. Our business will be harmed if our sales and marketing efforts do not generate significant increases in revenue or increases in revenue are smaller than anticipated. We may not achieve anticipated revenue growth from expanding our sales force if we are unable to hire, develop, integrate and retain talented and effective sales personnel, if our new and existing sales personnel, on the whole, are unable to achieve desired productivity levels in a reasonable period of time, or if our sales and marketing programs are not effective.

We experience a strong seasonality in sales in the fourth calendar quarter of the year. As a result, our results of operations are subject to substantial quarterly fluctuations, which may seriously harm our business.

We have experienced, and expect to continue to experience, seasonal fluctuations in sales due to the spending patterns of semiconductor customers who license our products. Typically, the number of total new license agreements we enter into have generally been lowest in the first and second calendar quarters. We expect these seasonality trends to continue. As a result, revenue recognized from our total new license agreements are subject to seasonal fluctuations, which may seriously harm our business.

Substantial portions of our sales are made, and we anticipate will be made, to automotive, enterprise computing, communications, consumer electronics, and industrial suppliers. Any downturn in any of these the markets could significantly harm our business.

Of our annual contract value at December 31, 2022, 21% was derived from customers that supply to the automotive market, 25% was derived from customers that supply to the enterprise computing market, 17% was derived from customers that supply to the communications market, 15% was derived from customers that supply to the consumer electronics market, 14% was derived from customers that supply to the industrial market and 8% was derived from customers who supply to other markets.

Each of these sectors is subject to specific market risks. The consumer sector, for example, is subject to changes in end consumer spending patterns, technology developments and general economic conditions.

We are also exposed to the risks associated with the automotive market. For example, our anticipated future growth is highly dependent on the adoption of autonomous driving technologies, which are expected to have increased sensor and power product content. A downturn in the automotive market could delay automakers' plans to introduce new vehicles with these features, which would negatively impact the demand for our products and our ability to grow our business.

Several industries in which companies incorporate our technology, including the automotive industry and others, may undergo consolidation and reorganization and, in some cases, their suppliers may or have entered bankruptcy. Although we have not experienced any lost business or material bad debt write-offs as a result of such consolidation, such trends could harm our business.

Moreover, as a result of the COVID-19 pandemic and the associated responses by governments of various countries to prevent its spread, the automotive industry, including manufacturers, dealers, distributors and third-party suppliers have been adversely impacted. For example, many automotive manufacturers were forced to suspend manufacturing operations and may be required to do so again. In addition, government-imposed restrictions on businesses, operations and travel and the related economic uncertainty have impacted demand in many global markets. While demand in the automotive industry is dependent on a number of factors, automotive manufacturers expect the impact of COVID-19 to be highly dependent on its duration and severity. The foregoing impacts and other adverse effects on the automotive industry could harm our business, as well as our ability to execute our growth strategy.

Our business has been, and may continue to be, adversely affected by health epidemics, pandemics and other outbreaks of infectious disease, including the current COVID-19 pandemic.

Public health threats, such as COVID-19, influenza and other highly communicable diseases or viruses, outbreaks of which have from time to time occurred in various parts of the world in which we operate could adversely impact our operations, as well as the operations of our customers, end users of our products, and our and their respective vendors, suppliers and other business partners. Any of these public health threats and related consequences could adversely affect our financial results.

The COVID-19 pandemic has reached across the globe, resulting in the implementation of significant governmental measures, including lockdowns, closures, quarantines, and travel bans intended to control the spread of the virus. Measures implemented by various authorities in response to the COVID-19 pandemic have caused us to change our business practices, including those related to where employees work, the distance between employees in our facilities, limitations on in-person meetings between employees and with customers, potential customers, suppliers, service providers and stakeholders, as well as restrictions on business travel to domestic and international locations and to attend trade shows, technical conferences and other events. While many of these measures are not currently in effect, ongoing social distancing measures, and future prevention and mitigation measures, as well as the potential for some of these measures to be reinstated in the event of repeat waves of the virus are likely to have, an adverse impact on global economic conditions, which could further affect our operations. A widespread epidemic, pandemic or other health crisis could also cause significant volatility in global markets. The COVID-19 outbreak has caused disruption in financial markets, which if it continues or intensifies, could reduce our ability to access capital and thereby harm our business.

These current and potential future measures that could restrict access to our facilities, limit support operations and place restrictions on our workforce, suppliers and other business partners have impacted and may further impact our workforce and operations, the operations of our customers and end users of our products, and those of our respective vendors, suppliers and other business partners. The disruptions to our operations caused by the COVID-19 pandemic may result in inefficiencies, delays and additional costs in our product development, sales, marketing, and customer service efforts that we cannot fully mitigate through remote or other alternative work arrangements. In addition, the severe global economic disruption, including recession, depression or other sustained adverse market impact caused by health crisis such as the COVID-19 pandemic, may cause our customers and end-users of our products to suffer significant economic hardship and potentially even go out of business, which could result in decreased demand for our products and harm our business.

The ultimate extent of the impact of any epidemic, pandemic, or other health crisis on our business will depend on multiple factors that are highly uncertain and cannot be predicted, including its severity, location and duration, and actions taken to contain or prevent further its spread. Additionally, the COVID-19 pandemic could increase the magnitude of many of the other risks described in this Annual Report on Form 10-K, and may have other material adverse effects on our operations that we are not currently able to predict. If our business and the markets in which we operate experience a prolonged occurrence of adverse public health conditions, such as COVID-19, it could materially adversely affect our business, financial condition, and results of operations.

We received a Paycheck Protection Program loan, and our application for the PPP Loan could in the future be determined to have been impermissible or could result in damage to our reputation.

In April 2020, we applied for and received an unsecured \$1.6 million loan under the Paycheck Protection Program (the PPP Loan). In December 2020, the PPP Loan was forgiven in full. The Paycheck Protection Program was established under the Coronavirus Aid, Relief, and Economic Security Act (the CARES Act), and is administered by the U.S. Small Business Administration (the SBA). In addition, in May 2020, Semifore, Inc., a company that we recently acquired, was a recipient of \$0.1 million of proceeds from a note payable issued under the Paycheck Protection Program (PPP) under section 7(a)(36) of the Small Business Act. The note was repaid in full in December 2020.

Our receipt of the PPP Loan or the forgiveness of the PPP Loan could result in adverse publicity. In addition, if we are later determined to have been ineligible to receive the PPP Loan or loan forgiveness, we may be subject to significant penalties, including significant civil, criminal and administrative penalties, we could be required to repay the PPP Loan in its entirety, and our reputation could suffer. A review or audit by the SBA or other government entity or claims under the U.S. False Claims Act could consume significant financial and management resources.

A significant portion of our revenue comes from licensing fees, which may vary period to period.

License agreements for our interconnect IP are generally treated as ratable revenue, with revenue being recognized evenly over the license term. The majority of software license agreements for our IP deployment solutions and CSRCompiler product are generally treated as point in time revenue at the start of the license period, so past revenue may not be indicative of the amount of revenue in any future period. Significant portions of our anticipated future revenue, therefore, will likely depend upon our success in attracting new customers, or continuing or expanding our relationships with existing customers. However, revenue recognized from licensing arrangements vary significantly from period to period, depending on the number and size of deals closed during a quarter, and is difficult to predict. In addition, as we expand our business into new markets, our licensing deals may be smaller in volume but greater in value in volume, which may further fluctuate our licensing revenue quarter to quarter. Our ability to succeed in our licensing efforts will depend on a variety of factors, including the market positioning, performance, delivery, quality, breadth and depth of our current and future IP interconnect and other solutions as well as our sales and marketing skills. Our failure to obtain future licensing customers would impede our future revenue growth and could materially harm our business.

As a result of these and other factors, you should not rely on the results of any prior quarterly or annual periods, or any historical trends reflected in such results, as indications of our future revenue or operating performance. Fluctuations in our revenue and operating results could cause our stock price to decline and, as a result, you may lose some or all of your investment.

Royalty rates could decrease for existing and future license agreements, which could materially adversely affect our operating results.

Royalty payments to us under existing and future license agreements could be lower than currently anticipated for a variety of reasons. Average selling prices for semiconductor products generally decrease over time during the lifespan of a product. Our gross margins and financial results will suffer if we are unable to offset reductions in our average selling prices by reducing our costs, developing new or enhanced products or solutions on a timely basis with higher selling prices or gross margins, or increasing our sales volumes. In addition, there is significant pressure to maintain low royalty rates in certain markets where the end product may have a low average sales price, such as many consumer electronics products. In addition, there is increasing downward pricing pressures in the semiconductor industry on end products incorporating our technology, especially end products for consumer electronics markets. As a result, notwithstanding the existence of a license agreement, our customers may demand that royalty rates for our products on future or renewal agreements be lower than our historic royalty rates. Furthermore, our competitors may lower the royalty rates for their comparable products to win market share which may force us to lower our royalty rates on future or renewal agreements as well. As a consequence of the above referenced factors, as well as unforeseen factors in the future, the royalty rates we receive for use of our technology could decrease with new or renewed customers, thereby decreasing future anticipated revenue and cash flow. Variable royalty revenue was 6.2% of our revenue for the year ended December 31, 2022. Therefore, a significant decrease in our royalty revenue could materially adversely affect our operating results.

Moreover, royalty rates may be negatively affected by macroeconomic trends, including from global semiconductor supply chain issues (including from shortages in the availability of the supply of chips in several semiconductor sectors and applications), the COVID-19 pandemic and its world effects and changes in products mix. Furthermore, consolidation among our customers may increase the leverage of our existing customers to extract concessions from us in royalty rates.

Changing currency exchange rates could harm our business.

We have operations and assets in the U.S. as well as foreign jurisdictions, and we prepare our consolidated financial statements in U.S. dollars, but a portion of our earnings and expenditures are denominated in other currencies. We therefore must translate our foreign assets, liabilities, revenue and expenses into U.S. dollars at applicable exchange rates. Consequently, fluctuations in the value of foreign currencies relative to the U.S. dollar may negatively affect the value of these items in our financial statements. In addition, since many of our sales in foreign jurisdictions are denominated in U.S. dollars, fluctuations in the value of foreign currencies relative to the U.S. dollar may effectively increase the price of our products in the currency of the jurisdiction in which the sale took place and may result in our products becoming too expensive for non-U.S. customers who do not conduct their business in U.S. dollars. Furthermore, currency exchange rates have been especially volatile in the recent past, and these currency fluctuations may make it difficult for us to predict our results of operations. If the volume of our international operations increases and foreign currency exchange rates change, the impact to our consolidated statements of operations could be significant and may affect the comparability of operating results. The impact from foreign currency exchange for the twelve months ended December 31, 2022 was immaterial. We do not believe a 10% increase or decrease in foreign exchange rates would have resulted in a material impact to our operating results. To the extent we fail to manage our foreign currency exposure adequately, we may suffer losses in the value of our net foreign currency investment, and our business may be harmed.

In particular, in light of the military conflict between Russia and Ukraine and the resulting tensions between the European Union, other European countries, as well as the United States, with Russia, any resulting material change to the valuation of the Euro relative to the U.S. dollar could adversely impact our operating results.

We have made acquisitions and in the future expect to pursue acquisitions of and investments in new businesses, products or technologies, joint ventures and other strategic transactions that involve numerous risks and could disrupt and harm our business.

As part of our business strategy, we make acquisitions of and investments in new businesses, such as our acquisition of Magillem, products and technologies and enter into joint ventures and other strategic relationships in the ordinary course. Our ability to grow our revenue, earnings and cash flow at or above our historic rates depends in part upon our ability to identify and successfully acquire and integrate businesses at acceptable prices, realize anticipated synergies and make appropriate investments that support our long-term strategy. We may not be able to consummate acquisitions at rates similar to the past, which could adversely impact our growth rate and the trading price of our common stock. Promising acquisitions and investments are difficult to identify and complete for a number of reasons, including high valuations, competition among prospective buyers, the availability of affordable funding in the capital markets and the need to satisfy applicable closing conditions and obtain applicable antitrust and other regulatory approvals on a timely basis and on acceptable terms. In addition, competition for acquisitions and investment may result in higher purchase prices. Changes in accounting or regulatory requirements or instability in the credit markets could also adversely impact our ability to consummate acquisitions and investments on acceptable terms or at all.

In addition, even if we are able to consummate acquisitions and enter into joint ventures and other strategic relationships, these transactions and relationships present a number of potential risks and challenges that could, if not met, disrupt our business operations, increase our operating costs, negatively affect our growth rate and the trading price of our common stock, and may harm our business. In addition, our Magillem and Semifore, Inc. acquisitions along with our Transchip investment as well as any acquisition, investment, joint venture or other strategic transaction that we may enter into in the future, involve a number of additional financial, accounting, managerial, operational, legal, regulatory and other risks, which may include, among others:

- Any business, technology, service or product that we acquire or invest in could under-perform relative to our expectations and the price that we paid or not perform in accordance with our anticipated timetable, or we could fail to operate any such business profitably.
- We may incur or assume significant debt in connection with our acquisitions, joint ventures and other strategic relationships, which could also cause a deterioration of our credit ratings, result in increased borrowing costs and interest expense and diminish our future access to the capital markets. Alternatively, we may issue additional equity securities, which could dilute your ownership and voting power.
- We expect to incur integration and startup costs.
- Acquisitions, joint ventures and other strategic relationships could cause our financial results to differ from our own or the investment community's expectations in any given period, or over the long-term challenges associated with integrating employees from the acquired company into our organization.
- Pre-closing and post-closing earnings charges could adversely impact operating results in any given period, and the impact may be substantially different from period to period.

- Acquisitions, joint ventures and other strategic relationships could create demands on our management, operational resources and financial and internal control systems that we are unable to effectively address.
- We could experience difficulty in integrating personnel, operations and financial and other controls and systems and retaining key employees and customers.
- We may be unable to achieve cost savings or other synergies anticipated in connection with an acquisition, joint venture or other strategic relationship.
- We may assume unknown liabilities, known contingent liabilities that become realized, known liabilities that prove greater than anticipated, internal control deficiencies or exposure to regulatory sanctions resulting from the acquired company's or investee's activities and the realization of any of these liabilities or deficiencies may increase our expenses, adversely affect our financial position and/or cause us to fail to meet our public financial reporting obligations.
- In connection with acquisitions and joint ventures, we often enter into post-closing financial arrangements such as purchase price adjustments, earn-out obligations and indemnification obligations, which may have unpredictable financial results.
- As a result of our acquisitions, we have recorded significant goodwill and other assets on our consolidated balance sheet and if we are not able to realize the value of these assets, or if the fair value of our investments declines, we may be required to incur impairment charges.
- We may have interests that diverge from those of our joint venture partners or other strategic partners and we may not be able to direct the management and operations of the joint venture or other strategic relationship in the manner we believe is most appropriate, exposing us to additional risk.
- Investing in or making loans to early-stage companies often entails a high degree of risk, and we may not achieve the strategic, technological, financial or commercial benefits we anticipate; we may lose our investment or fail to recoup our loan; or our investment may be illiquid for a greater-than-expected period of time.

Furthermore, potential acquisitions, investments, joint ventures and other strategic transactions, whether or not consummated, may divert our management's attention and require considerable cash outlays at the expense of our existing operations. This, and any of the risks set forth above, could harm our business.

Our ability to raise capital in the future may be limited and could prevent us from executing our growth strategy.

Our ability to operate and expand our business depends on the availability of adequate capital, which in turn depends on cash flow generated by our business and equity or other applicable financing arrangements. We believe that our existing cash and cash equivalents, short-term investments and cash provided by sales of our products will satisfy our anticipated cash requirements for at least the next 12 months. However, we have based this estimate on our current operating plans and expectations, which are subject to change, and cannot assure you that that our existing resources will be sufficient to meet our future liquidity needs. We may require additional capital to respond to business opportunities, challenges, acquisitions or other strategic transactions and/or unforeseen circumstances. The timing and amount of our working capital and capital expenditure requirements may vary significantly depending on numerous factors, including:

- market acceptance of our semiconductor IP and other solutions, and our IP deployment solutions;
- the need to adapt to changing technologies and technical requirements;
- the existence of opportunities for expansion; and
- access to and availability of sufficient management, technical, marketing and financial personnel.

If our capital resources are insufficient to satisfy our liquidity requirements, we may seek to sell additional equity securities or debt securities or obtain additional debt financing. The sale of additional equity securities or convertible debt securities would result in additional dilution to our stockholders. Additional debt would result in increased expenses and could result in covenants that would restrict our operations and our ability to incur additional debt or engage in other capital-raising activities. We have not made arrangements to obtain additional financing and there is no assurance that financing, if required, will be available in amounts or on terms acceptable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us, when we require it, our ability to continue to grow and support our business and respond to business opportunities and challenges could be significantly limited.

We may not be able to effectively manage our growth, and we may need to incur significant expenditures to address the additional operational and control requirements of our growth, either of which could harm our business and operating results.

In order to succeed in executing our business plan, we will need to manage our growth effectively as we make significant investments in research and development and sales and marketing and expand our operations and infrastructure both domestically and internationally. In addition, in connection with operating as a public company, we will incur additional significant legal, accounting and other expenses that we did not incur as a private company. If our revenue does not increase to offset these increases in our expenses, we may not achieve or maintain profitability in future periods.

To continue to grow and to meet our ongoing obligations as a public company, we must continue to expand our operational, engineering, accounting and financial systems, procedures, controls and other internal management systems. This may require substantial managerial and financial resources, and our efforts in this regard may not be successful. Our current systems, procedures and controls may not be adequate to support our future operations and we may be unable to meet reporting obligation deadlines under the Exchange Act. Unless our growth results in an increase in our revenue that is proportionate to the increase in our costs associated with this growth, our operating margins will be adversely affected. If we fail to adequately manage our growth, improve our operational, financial and management information systems, or effectively motivate and manage our new and future employees, it could harm our business.

We depend on key and highly skilled personnel to operate our business, and if we are unable to retain our current personnel and hire additional personnel, our ability to develop and market our products could be harmed, which in turn could adversely affect our financial results.

Our success depends to a large extent upon the continued services of our executive officers, managers and skilled personnel, including our development engineers. In particular, we are highly dependent on the services of K. Charles Janac, our President, Chief Executive Officer and Chairman, who has been critical in the development and growth of our business and strategic direction, and we do not have key person insurance. From time to time, there may be changes in our executive management team or other key personnel, which could disrupt our business. Generally, our employees are not bound by obligations that require them to continue to work for us for any specified period and, therefore, they could terminate their employment with us at any time. Moreover, our employees are generally not subject to non-competition agreements. Given these limitations, we may not be able to continue to attract, retain and motivate qualified personnel necessary for our business.

In addition, we recruit from a limited pool of engineers with expertise in SoC design and the competition for such personnel can be intense. The loss of one or more of our executive officers or other key personnel, the loss of access to certain jurisdictions in the event of geopolitical conflict or changes in regulatory frameworks, or our inability to locate suitable or qualified replacements could be significantly detrimental to our product development efforts and could harm our business. In addition, we must attract and retain highly qualified personnel, including certain foreign nationals who are not U.S. citizens or permanent residents, many of whom are highly skilled and constitute an important part of our U.S. workforce, particularly in the areas of engineering and product development. Our ability to hire and retain these employees and their ability to remain and work in the U.S. are impacted by laws and regulations, as well as by procedures and enforcement practices of various government agencies. Changes in immigration laws, regulations or procedures may adversely affect our ability to hire or retain such workers, increase our operating expenses and negatively impact our ability to deliver our products and services, any of which would harm our business.

Volatility in, or lack of performance of, our stock price may also affect our ability to attract and retain key personnel. Employees may be more likely to terminate their employment with us if the shares they own or the shares underlying their vested options or restricted stock units have significantly appreciated in value relative to the original purchase prices of the shares or the exercise prices of the options, or, conversely, if the exercise prices of the options that they hold are significantly above the trading price of our common stock. If we are unable to retain our employees, our business could be harmed.

Our management team has limited experience managing a public company.

Many members of our management team have limited experience managing a publicly-traded company, interacting with public company investors and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage us as a public company subject to significant regulatory oversight and reporting obligations under the federal securities laws and the continuous scrutiny of securities analysts and investors. These new obligations and constituents require significant attention from our senior management and could divert their attention away from the day-to-day management of our business, which could harm our business.

Catastrophic events may disrupt our business.

Our corporate headquarters are located in an area that is an active earthquake zone. In the event of a major earthquake, hurricane or other forms of catastrophic event such as fire, power loss, telecommunications failure, cyber-attack, war, terrorist attack or disease outbreak, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our product development, breaches of data security, or loss of critical data, any of which could have an adverse effect on our future results of operations.

If our counterparties are unable to fulfill their financial and other obligations to us, our business and results of operations may be affected adversely.

Any downturn in economic conditions or other business factors could threaten the financial health of our counterparties, including companies with which we have entered into licensing agreements, and their ability to fulfill their financial and other obligations to us. Such financial pressures on our counterparties may eventually lead to bankruptcy proceedings or other attempts to avoid financial obligations that are due to us. Because bankruptcy courts have the power to modify or cancel contracts of the petitioner which remain subject to future performance and alter or discharge payment obligations related to pre-petition debts, we may receive less than all of the payments that we would otherwise be entitled to receive from any such counterparty as a result of bankruptcy proceedings.

Risks Related to Intellectual Property, Information Technology and Data Security and Privacy

If we are unable to protect our proprietary technology and inventions through patents and other IP rights, our ability to compete successfully and our financial results could be adversely impacted.

We seek to protect our proprietary technology and innovations, particularly those relating to the design of our products, through patents, trade secrets and other IP rights. As of December 31, 2022, we had 129 total allowed or issued patents, pending patent applications and non-expired provisional patent applications worldwide. Of these, we had 54 allowed or issued patents, 48 of which are U.S. allowed or issued patents, three of which are allowed or issued China patents, one is a U.K. issued patent, one is a Japan issued patent, and one is a South Korea issued patent. The 54 allowed or issued patents generally expire between July 2035 and December 2041. As of December 31, 2022, we had 75 pending non-provisional and provisional patent application filings, including 37 in the United States, 18 in Europe, 16 in China, three in South Korea and one in Japan. Maintenance of patent portfolios, particularly outside of the United States, is expensive, and the process of seeking patent protection is lengthy and costly. While we intend to maintain our current portfolio of patents and to continue to prosecute our currently pending patent applications and file future patent applications when appropriate, the value of these actions may not exceed their expense. Existing patents and those that may be issued from any pending or future applications may be subject to challenges, invalidation or circumvention, and the rights granted under our patents may not provide us with meaningful protection or any commercial advantage. In addition, the protection afforded under the patent laws of one country may not be the same as that in other countries. This means, for example, that our right to exclusively commercialize a product in those countries where we have patent rights for that product can vary on a country-by-country basis. We also may not have the same scope of patent protection in every country where we do business.

Additionally, it is difficult and costly to monitor the use of our IP. It may be the case that our IP is already being infringed and infringement may occur in the future without our knowledge. Litigation may be necessary to enforce our IP rights. While it is our policy to protect and defend our rights to our IP, we cannot predict whether steps taken by us to enforce and protect our IP rights will be adequate to prevent infringement, misappropriation, or other violations of our IP rights. Any inability to meaningfully enforce our IP rights could harm our ability to compete. Moreover, in any lawsuit we bring to enforce our IP rights, a court may refuse to stop the other party from using the technology at issue on grounds that our IP rights do not cover the technology in question. Further, in such proceedings, the defendant could counterclaim that our IP is invalid or unenforceable and the court may agree, in which case we could lose valuable IP rights. Any litigation of this nature, regardless of outcome or merit, could materially harm our business and hurt our competitive advantage.

If we are unable to protect our proprietary technology and inventions through trade secrets, our competitive position and financial results could be adversely affected.

As noted above, we seek to protect our proprietary technology and innovations, particularly those relating to our products, as patents, trade secrets and other forms of IP. Additionally, while software and other forms of our proprietary works may be protected under copyright law, in some cases we have chosen not to register any copyrights in these works, and instead, primarily rely on protecting our software as a trade secret. In the United States, trade secrets are protected under the federal Economic Espionage Act of 1996 and the Defend Trade Secrets Act of 2016 (the Defend Trade Secrets Act), and under state law, with many states having adopted the Uniform Trade Secrets Act (the UTSA) and several of which that have not. In addition to these federal and state laws inside the United States, under the World Trade Organization's Trade Related-Aspects of IP Rights Agreement (the TRIPS Agreement), trade secrets are to be protected by World Trade Organization member states as "confidential information." Under the UTSA and other trade secret laws, protection of our proprietary information as trade secrets requires us to take steps to prevent unauthorized disclosure to third parties or misappropriation by third parties. In addition, the full benefit of the remedies available under the Defend Trade Secrets Act requires specific language and notice requirements present in the relevant agreements, which may not be present in all of our agreements. While we require our officers, employees, consultants, distributors, and existing and prospective customers and collaborators to sign confidentiality agreements and take various security measures to protect unauthorized disclosure and misappropriation of our trade secrets, we cannot assure or predict that these measures will be sufficient. The semiconductor industry is generally subject to high turnover of employees, so the risk of trade secret misappropriation may be amplified. If any of our trade secrets are subject to unauthorized disclosure or are otherwise misappropriated by third parties, our competitive position may be materially and adversely affected.

Our ability to compete successfully depends in part on our ability to commercialize our IP solutions without infringing the patent, trade secret or other IP rights of others.

To the same extent that we seek to protect our technology and inventions with patents, trade secrets and other IP rights, our competitors and other third parties do the same for their technology and inventions. We have no means of knowing the content of patent applications filed by third parties until they are published. It is also difficult and costly to continuously monitor the IP portfolios of our competitors to ensure our technologies do not violate the IP rights of any third parties.

Claims by other companies that we infringe their intellectual property rights or that patents on which we rely are invalid could adversely affect our business.

The semiconductor industry is ripe with patent assertion entities and is characterized by frequent litigation regarding patent and other IP rights. From time to time, we receive communications from or are sued by third parties that allege that our products or technologies infringe their patent or other IP rights. As a public company with an increased profile and visibility, we may receive similar communications in the future. Lawsuits or other proceedings resulting from allegations of infringement could subject us to significant liability for damages, invalidate our proprietary rights and harm our business. We may not prevail in lawsuits alleging patent infringement given the complex technical issues and inherent uncertainties in intellectual property litigation. If any of our products, technologies or services from which we derive or expect to derive a substantial portion of our revenues, were found to infringe on another company's intellectual property rights, we could be subject to damages, an injunction and/or other equitable relief that would force the removal of such product from the market or we could be required to redesign such product, or take a license to the third party technology, which could be costly. We could also be ordered to pay damages or other compensation, including punitive damages and attorneys' fees to such other company. A negative outcome in any such litigation could also severely disrupt the sales of our marketed products to our customers or their customers, which in turn could harm our relationships with our customers, our market share and our product revenues. Even if we are ultimately successful in defending any intellectual property litigation, such litigation is expensive and time consuming, will divert our management's attention from our business and may harm our reputation.

In the event that any third-party succeeds in asserting a valid claim against us or any of our customers, we could be forced to do one or more of the following:

- discontinue selling access to certain technologies that contain the allegedly infringing IP which would result in a decline in our revenue and could result in breach of contract claim by our affected customers and damage to our reputation;
- stop receiving payment from a customer that can no longer sell the end-product if it contains allegedly infringing IP;
- seek to develop non-infringing technologies, which may not be feasible;
- incur significant legal expenses;

- pay substantial monetary damages to the party whose IP rights we may be found to be infringing; and/or
- we or our customers could be required to seek licenses to the infringed technology that may not be available on commercially reasonable terms, if at all.

If a third party causes us to discontinue the use of any of our technologies, we could be required to design around those technologies. This could be costly and time consuming and could have an adverse impact on our financial results. Any significant impairments of our IP rights from any litigation we face could harm our business and our ability to compete in our industry.

We may not be able to continue to obtain licenses to third-party software and IP on reasonable terms or at all, which may disrupt our business and harm our financial results.

We license third-party software and other IP for use in product research and development and, in several instances, for inclusion in our products such as our license with Qualcomm for FlexNoC. We also license third-party software, including the software of our competitors, to test the interoperability of our products with other industry products and in connection with our professional services. Our third-party licenses typically limit our use of IP to specific uses and for specific time periods, and include other contractual obligations with which we must comply. Moreover, certain IP rights may be licensed to us on a non-exclusive basis, and accordingly, the owners of such IP are free to license such rights to third parties, including our competitors, on terms that may be superior to those offered to us, which could place us at a competitive disadvantage. These licenses may need to be renegotiated or renewed from time to time, or we may need to obtain new licenses in the future. For example, we may be required to renegotiate or seek a waiver to or consent under our license with Qualcomm with respect to our FlexNoC product in the event of certain changes of control (as defined in our agreements with Qualcomm) and there can be no guarantee we would be successful in such endeavor. Such provision could prevent us from pursuing a robust sales process in the event of a sale of the company, if Qualcomm refuses to provide consent or waive such change in control provision. In such an event, a change in control could cause us to lose our license with Qualcomm and our valuation could be adversely affected. See “Business—Material Agreement—Qualcomm Agreements” for additional information. Third parties may stop adequately supporting or maintaining their technology, or they or their technology may be acquired by our competitors. If we are unable to obtain licenses to these third-party software and IP on reasonable terms or at all, we may not be able to sell or support the affected products, our customers’ use of the products may be interrupted, and/or our product development processes and professional services offerings may be disrupted, which could in turn harm our financial results, our customers, and our reputation. Further, if we or our third-party licensors were to breach any material term of a license, such a breach could, among other things, prompt costly litigation, result in the license being terminated or result in fines and other damages. If any of the following were to occur, it could harm our business and our reputation.

We also cannot be certain that our licensors are not infringing the IP rights of others or that our licensors have sufficient rights to the IP to grant us the applicable licenses. Although we seek to mitigate this risk contractually, we may not be able to sufficiently limit our potential liability. If we are unable to obtain or maintain rights to any of this IP because of IP infringement claims brought by third parties against our licensors or against us, our ability to develop, maintain and support our products and technology incorporating that IP could be severely limited and our business could be harmed. Furthermore, regardless of outcome, infringement claims may require us to use significant resources and may divert management’s attention.

Some of our products and technology, including those we acquire, may include software licensed under open-source licenses. Use and distribution of open-source software, where applicable, may entail greater risks than use of third-party commercial software, as open-source licensors generally do not provide support, warranties, indemnification, or other contractual protections regarding infringement claims or the quality of the code. To the extent that our technology may in the future depend upon the successful operation of open-source software, any undetected errors or defects in this open-source software could prevent the deployment or impair the functionality of such technologies and injure our reputation.

Moreover, some open-source software licenses require users who distribute that open-source software as part of their proprietary software to publicly disclose all or part of the source code to such software and make available any derivative works or modifications of the open-source code on unfavorable terms or at no cost. If we were to combine our proprietary software with such open-source software in a certain manner, we could, under certain circumstances, be required to comply with such license terms. Although we have tools and processes to monitor and restrict our use of open-source software, the risks associated with open-source usage may not be eliminated and may, if not properly addressed, result in unanticipated obligations that could harm our business.

Any dispute regarding our IP may require us to indemnify certain customers, the cost of which could severely harm our business.

In any potential dispute involving our patents or other IP, our customers could also become the target of litigation. Some of our agreements, including those with key customers like Texas Instruments Incorporated and Samsung Electronics Co., Ltd., provide for indemnification, and some require us to provide technical support and information to a customer that is involved in litigation involving use of our technology. In addition, we may be exposed to indemnification obligations, risks and liabilities that were unknown at the time that we acquired assets or businesses for our operations. Any of these indemnification and support obligations could result in substantial and material expenses. In addition to the time and expense required for us to indemnify or supply such support to our customers, a customer's development, marketing and sales of licensed semiconductors, mobile communications and data security technologies could be severely disrupted or shut down as a result of litigation, which in turn could severely harm our business as a result of lower or no royalty payments.

Cybersecurity threats continue to increase in frequency and sophistication; a successful cybersecurity attack could interrupt or disrupt our information technology systems, or those of our third-party service providers, or cause the loss of confidential or protected data which could disrupt our business, force us to incur excessive costs or cause reputational harm.

Security breaches, computer malware and computer hacking attacks have become more prevalent across industries and may occur on our systems or those of our third-party service providers or partners. The size and complexity of our information systems make such systems potentially vulnerable to service interruptions or to security breaches from inadvertent or intentional actions by our employees or vendors, or from attacks by malicious third parties. Such attacks are increasing in their frequency, levels of persistence, levels of sophistication and intensity, and are being conducted by sophisticated and organized groups and individuals with a wide range of motives and expertise. As a result of the COVID-19 pandemic, we may face increased cybersecurity risks due to our reliance on internet technology and the number of our employees who are working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. In addition to unauthorized access to or acquisition of personal data, confidential information, intellectual property or other sensitive information, such attacks could include the deployment of harmful malware and ransomware, and may use a variety of methods, including denial-of-service attacks, phishing, social engineering and other means, to attain such unauthorized access or acquisition or otherwise affect service reliability and threaten the confidentiality, integrity and availability of information. Like many other companies, we experience attempted cybersecurity actions on a frequent basis, and the frequency of such attempts could increase in the future. While we have invested in the protection of data and information technology, there can be no assurance that our efforts will prevent or quickly identify service interruptions or security breaches. For example, in 2019 a customer paid an invoice to a fraudulent third party and such amount could not be recovered. The techniques used by cybercriminals to obtain unauthorized access to systems or sabotage systems, or disable or degrade services, change frequently, may not be recognized until launched against a target and can originate from a wide variety of sources, including outside groups such as external service providers, organized crime affiliates, terrorist organizations or hostile foreign governments or agencies. We cannot assure that our data protection efforts and our investment in information technology will prevent significant breakdowns, data leakages or breaches in our systems or those of our third-party services providers or partners. Any such interruption or breach of our systems could adversely affect our business operations and/or result in the loss of critical or sensitive confidential information or intellectual property, and could result in financial, legal, business and reputational harm to us. Data security breaches could also expose us to liability under various laws and regulations across jurisdictions and increase the risk of litigation and governmental or regulatory investigation. For example, the California Consumer Privacy Act of 2018 as amended by the California Privacy Rights Act, collectively the CCPA, imposes a private right of action for security breaches that could lead to some form of remedy including regulatory scrutiny, fines, private right of action settlements, and other consequences. Where a security incident involves a breach of security leading to the accidental or unlawful destruction, loss, alternation, unauthorized disclosure of, or access to, personal data in respect of which we are a controller or processor under the GDPR or U.K. GDPR (as defined below), this could result in fines of up to €20.0 million or 4% of annual global turnover under the GDPR or £17.5 million and 4% of total annual revenue in the case of the U.K. GDPR. Due to concerns about data security and integrity, a growing number of legislative and regulatory bodies have adopted breach notification and other requirements in the event that information subject to such laws is accessed by unauthorized persons and additional regulations regarding security of such data are possible. We may be required to notify such breaches to regulators and/or individuals which may result in us incurring additional costs. Moreover, any such compromise of our information security or that of our third parties could result in the misappropriation or unauthorized publication or other exploitation of our confidential business or proprietary information or personal information or that of other parties with which we do business, an interruption in our operations, the unauthorized transfer of cash or other assets, the unauthorized release of customer or employee data or a violation of privacy or other laws. In addition, computer programmers and hackers also may be able to develop and deploy viruses, worms and other malicious software programs that attack our products, or that otherwise exploit any security vulnerabilities, and any such attack, if successful, could expose us to liability to customer claims. Any of the foregoing could irreparably damage our reputation and business, which could have a material adverse effect on our results of operations, cause us to incur significant costs, including legal expenses and remediation costs.

We maintain cyber liability insurance; however, this insurance may not be sufficient to cover the financial, legal, business or reputational losses that may result from an interruption or breach of our systems.

We are subject to data protection, privacy and security laws, regulations, standards and other requirements across different markets where we conduct our business. Our actual or perceived failure to comply with such obligations could harm our business.

The global data protection landscape is rapidly evolving, and we are or may become subject to numerous state, federal and foreign laws, regulations, legal requirements, contractual obligations and industry standards regarding security, data protection and privacy and any actual or perceived failure to comply with these requirements, obligations or standards could harm our reputation and business. If we are found to have breached any such laws or regulations in any such jurisdiction, we may be subject to enforcement actions that require us to change our business practices in a manner which may negatively impact our revenue, as well as expose us to litigation, fines, civil and/or criminal penalties and adverse publicity that could cause our customers to lose trust in us, negatively impacting our reputation and business in a manner that harms our financial position. Implementation standards and enforcement practices are likely to remain uncertain for the foreseeable future, and we cannot yet determine the impact future laws, regulations, standards, or perception of their requirements may have on our business. This evolution may create uncertainty in our business, affect our ability to operate in certain jurisdictions or to collect, store, transfer use and share personal information, necessitate the acceptance of more onerous obligations in our contracts, result in liability or impose additional costs on us. The cost of compliance with these laws, regulations and standards is high and is likely to increase in the future.

As part of our business, we collect personal data, and other potentially sensitive and/or regulated data from our customers. In the U.S., numerous federal and state laws and regulations, including data breach notification laws data privacy and security laws and consumer protection laws and regulations govern the collection, use, disclosure protection and other processing of personal information. For example, the CCPA requires covered companies to, among other things, provide certain disclosures to California consumers about use of personal information, and affords such consumers new privacy rights such as the ability to opt-out of certain sales of personal information and expanded rights to access and require deletion of their personal information, opt out of certain personal information sharing, and receive detailed information about how their personal information is collected, used and shared. The CCPA provides for civil penalties for violations, as well as a private right of action for security breaches that may increase security breach litigation. Additionally, the California Privacy Rights Act (CPRA) recently passed in California. The CPRA significantly amends the CCPA and will impose additional data protection obligations on covered businesses, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions went into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. Further, Virginia enacted the Virginia Consumer Data Protection Act, another comprehensive state privacy law, effective January 1, 2023. Colorado also enacted the Colorado Privacy Act, effective July 1, 2023, Connecticut enacted the Connecticut Data Privacy Act, effective July 1, 2023, and Utah enacted the Utah Consumer Privacy Act, effective December 31, 2023. These state privacy laws may increase our compliance costs and potential liability, particularly in the event of a data breach, and could harm our business, including how we use personal information. A number of other proposals exist for new federal and state privacy legislation that, if passed, could increase our potential liability, increase our compliance costs and harm our business.

Our operations abroad may also be subject to increased scrutiny or attention from data protection authorities. For example, the EU General Data Protection Regulation (EU GDPR) and the UK General Data Protection Regulation and the UK Data Protection Act 2018 (UK GDPR) (collectively, the GDPR) imposes comprehensive data privacy compliance obligations on our collection, processing, sharing, disclosure, transfer and other use of data relating to an identifiable living individual or “personal data”. The EU and UK regimes also include laws which, among other things, require European Economic Area (EEA) member states and the UK to regulate marketing by electronic means and the use of cookies and similar technologies. The GDPR has resulted in, and will continue to result in, significant compliance burdens and costs for companies with customers and/or operations in the EEA and the UK. The GDPR, and national implementing legislation in each member state, imposes a strict data protection compliance regime including: (i) providing detailed disclosures about how personal data is collected and processed; (ii) demonstrating that an appropriate legal basis is in place or otherwise exists to justify data processing activities; (iii) granting certain rights for data subjects in regard to their personal data (including transparency, the right to be “forgotten,” right to data portability, right of access, and right to rectification); (iv) obligation to notify data protection regulators or supervisory authorities (and in certain cases, affected individuals) of significant data breaches; (v) imposing limitations on retention of personal data; (vi) maintaining a record of data processing; and (vii) complying with the principal of accountability and the obligation to demonstrate compliance through policies, procedures, training and audit. If our privacy or data security measures fail to comply with applicable current or future laws and regulations, we may be subject to litigation, regulatory investigations, and enforcement notices requiring us to change the way we use personal data or our marketing practices. For example, under the GDPR we may be subject to fines of up to €20 million / £17.5 million or up to 4% of the total worldwide annual group turnover of the preceding financial year (whichever is higher) for major violations. In addition to the foregoing, a breach of the GDPR could result in regulatory investigations, reputational damage, orders to cease/ change our processing of our data, enforcement notices, and/ or assessment notices (for a compulsory audit). We may also face civil claims including representative actions and other class action type litigation (where individuals have suffered harm), potentially amounting to significant compensation or damages liabilities, as well as associated costs, diversion of internal resources, reputational harm and a potential loss of business.

We are also subject to European Union rules with respect to cross-border transfers of personal data out of the EEA and the UK. Recent legal developments in Europe have created complexity and uncertainty regarding transfers of personal data from the EEA and the UK to the United States. In July 2020, the Court of Justice of the EU (CJEU) limited how organizations could lawfully transfer personal data from the EU/EEA to the United States by invalidating the Privacy Shield for purposes of international transfers and imposing further restrictions on the use of standard contractual clauses (SCCs). In March 2022, the US and EU announced a new regulatory regime intended to replace the invalidated regulations; however, this new EU-US Data Privacy Framework has not been implemented beyond an executive order signed by President Biden on October 7, 2022 on Enhancing Safeguards for United States Signals Intelligence Activities. The CJEU went on to state that if a competent supervisory authority believes that the SCCs cannot be complied with in the destination country and the required level of protection cannot be secured by other means, such supervisory authority is under an obligation to suspend or prohibit that transfer. The European Commission has published revised SCCs, which must be used for relevant new data transfers from September 27, 2021; existing standard contractual clauses arrangements must be migrated to the revised SCCs by December 27, 2022. We currently rely on the SCCs to transfer personal data outside the EEA and the UK, including to the U.S., with respect to both intragroup and third party transfers. We will be required to implement the revised applicable SCCs within the relevant time frames. In addition, the UK’s Information Commissioner’s Office has published new data transfer standard contracts for transfers from the UK under the UK GDPR. This new documentation will be mandatory for relevant data transfers from September 21, 2022; existing SCCs arrangements must be migrated to the new documentation by March 21, 2024. We will be required to implement the latest UK data transfer documentation for data transfers subject to the UK GDPR, within the relevant time frames. These recent developments may require us to review and amend the legal mechanisms by which we make and/ or receive personal data transfers to in the U.S. As supervisory authorities issue further guidance on personal data export mechanisms, including circumstances where the standard contractual clauses cannot be used, and/or start taking enforcement action, we could suffer additional costs, complaints and/or regulatory investigations or fines.

Further, the exit of the UK from the EU, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the UK. The European Commission has adopted an adequacy decision in favor of the UK, enabling data transfers from EU member states to the UK without additional safeguards. However, the UK adequacy decision will automatically expire in June 2025 unless the European Commission re-assesses and renews/ extends that decision, and remains under review by the Commission during this period. In September 2021, the UK government launched a consultation on its proposals for wide-ranging reform of UK data protection laws following Brexit. There is a risk that any material changes which are made to the UK data protection regime could result in the Commission reviewing the UK adequacy decision, and the UK losing its adequacy decision if the Commission deems the UK to no longer provide adequate protection for personal data. The relationship between the UK and the EU in relation to certain aspects of data protection law remains unclear, and it is unclear how UK data protection laws and regulations will develop in the medium to longer term, and how data transfers to and from the UK will be regulated in the long term. These changes will lead to additional costs and increase our overall risk exposure.

Restrictions on the collection, use, sharing or disclosure of personal information or additional requirements and liability for security and data integrity could require us to modify our solutions and features, possibly in a material manner, could limit our ability to develop new products and features and could subject us to increased compliance obligations and regulatory scrutiny.

Although we make reasonable efforts to comply with all applicable data protection laws and regulations, our interpretations and such measures may have been or may prove to be insufficient or incorrect. Any failure to comply with any data protection laws and/or regulations that results in a data security breach could require notifications to data subjects and/or owners under federal, state and/or international data breach notification laws and regulations. The effects of any applicable U.S. state, federal and international laws and regulations that are currently in effect or that may go into effect in the future, are significant and may require us to modify our data processing practices and policies and to incur substantial costs and potential liability in an effort to comply with such laws and regulations. Allegations of non-compliance, whether or not true, could be costly, time consuming, distracting to management, and cause reputational harm. In addition to government regulation, privacy advocates and industry groups may propose new and different self-regulatory standards. Because the interpretation and application of privacy and data protection laws are still uncertain, it is possible that these laws may be interpreted and applied in a manner that is inconsistent with one another or inconsistent with our existing data management practices or the features of our products and services. Any actual or perceived failure to comply with these and other data protection and privacy laws and regulations could result in regulatory scrutiny and increased exposure to the risk of litigation or the imposition of consent orders, resolution agreements, requirements to take particular actions with respect to training, policies or other activities, and civil and criminal penalties, including fines, which could harm our business. In addition, we or our third-party service providers could be required to fundamentally change our business activities and practices or modify our products and services, which could harm our or our third-party service providers' business. Any of the foregoing could result in additional cost and liability to us, damage our reputation, inhibit sales, and harm our business.

Risks Related to Legal, Regulatory, Accounting and Tax Matters

Our failure to comply with the large body of laws and regulations to which we are subject could materially harm our business.

We are subject to regulation by various governmental agencies in the United States and other jurisdictions in which we operate. These laws and regulations (and the government agency responsible for their enforcement in the United States) cover: radio frequency emission regulatory activities (Federal Communications Commission); anti-trust regulatory activities (Federal Trade Commission and Department of Justice); consumer protection laws (Federal Trade Commission); import/export regulatory activities (Department of Commerce); product safety regulatory activities (Consumer Products Safety Commission); worker safety (Occupational Safety and Health Administration); environmental protection (Environmental Protection Agency and similar state and local agencies); employment matters (Equal Employment Opportunity Commission); and tax and other regulations by a variety of regulatory authorities in each of the areas in which we conduct business. In certain jurisdictions, regulatory requirements in one or more of these areas may be more stringent than in the United States.

In the area of employment matters, we are subject to a variety of federal, state and foreign employment and labor laws and regulations, including the Americans with Disabilities Act, the Federal Fair Labor Standards Act, the WARN Act and other regulations related to working conditions, wage and hour pay, overtime pay, employee benefits, anti-discrimination, and termination of employment. We are subject to local employment statutes and regulations in other jurisdictions. Noncompliance with any of these applicable regulations or requirements could subject us to investigations, sanctions, enforcement actions, fines, damages, penalties, or injunctions. In certain instances, former employees have brought claims against us and we expect that we will encounter similar actions against us in the future. An adverse outcome in any such litigation could require us to pay damages, attorneys' fees and costs. These enforcement actions could harm our reputation and business. If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business could be harmed. In addition, responding to any action will likely result in a significant diversion of management's attention and resources and an increase in professional fees.

Our failure to comply with the Foreign Corrupt Practices Act, other applicable anti-corruption and anti-bribery laws, and applicable anti-money laundering laws could subject us to penalties and other adverse consequences.

We have extensive international operations and a substantial portion of our business is conducted outside of the United States. Our operations are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended (the FCPA), the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, as well as the anti-corruption, anti-bribery, and anti-money laundering laws in the countries where we do business. Anti-corruption laws are interpreted broadly and prohibit companies and their employees and agents from promising, authorizing, making, or offering, soliciting, or accepting, directly or indirectly, improper payments or other benefits to or from any person whether in the public or private sector. The FCPA also requires publicly traded companies to maintain records that accurately and fairly represent their transactions, and to have an adequate system of internal accounting controls. As we increase our international sales and business, our risks under these laws may increase.

Though we maintain policies, internal controls and other measures reasonably designed to promote compliance with applicable anti-corruption, anti-bribery laws, and anti-money laundering laws and regulations, our employees or agents may nevertheless engage in improper conduct for which we might be held responsible. Any violations of these laws, or even allegations of such violations, can lead to an investigation and/or enforcement action, which could disrupt our operations, involve significant management distraction, and lead to significant costs and expenses, including legal fees. If we, or our employees or agents acting on our behalf, are found to have engaged in practices that violate these laws and regulations, we could suffer severe fines and penalties, profit disgorgement, injunctions on future conduct, securities litigation, bans on transacting government business, delisting from securities exchanges and other consequences that may harm our business. In addition, our reputation, our revenue or our stock price could be adversely affected if we become the subject of any negative publicity related to actual or potential violations of any of these laws and regulations.

We are subject to government regulation, including import, export and economic sanctions laws and regulations that may expose us to liability and increase our costs.

Certain of our products, including our IP interconnect and other solutions and technology are subject to U.S. export controls, including the U.S. Department of Commerce's Export Administration Regulations (EAR) and economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls. These regulations may limit the export of our products and technology, and provision of our services outside of the United States, or may require export authorizations, including by license, a license exception, or other appropriate government authorizations and conditions, including annual or semi-annual reporting. Export control and economic sanctions laws may also include prohibitions on the sale or supply of certain of our products to embargoed or sanctioned countries, regions, governments, persons, and entities. In addition, various countries regulate the importation of certain products, through import permitting and licensing requirements, and have enacted laws that could limit our ability to distribute our products. The exportation, re-exportation, and importation of our products and technology and the provision of services, including by our partners, must comply with these laws or else we may be adversely affected through reputational harm, government investigations, penalties, and a denial or curtailment of our ability to export our products and technology. Complying with export control and sanctions laws may be time-consuming and may result in the delay or loss of sales opportunities. Although we take precautions to prevent our products and technology from being provided in violation of such laws, our products and technology have previously been, and could in the future be, provided inadvertently in violation of such laws, despite the precautions we take. If we are found to be in violation of U.S. sanctions or export control laws, it could result in substantial fines and penalties for us and for the individuals working for us. Changes in export or import laws or sanctions policies may adversely impact our operations, delay the introduction and sale of our products in international markets, or, in some cases, prevent the export or import of our products and technology to certain countries, regions, governments, persons, or entities altogether, which could harm our business.

We will lose sales if we are unable to obtain government authorization to export certain of our products and services, and we will be subject to legal and regulatory consequences if we do not comply with applicable export control laws and regulations.

Exports of certain of our IP interconnect and other solutions are subject to export controls imposed by the U.S. government and administered by the U.S. Departments of State and Commerce. In certain instances, these regulations may require pre-shipment authorization from the administering department. For products subject to the EAR, administered by the Department of Commerce's Bureau of Industry and Security (BIS), the requirement for a license is dependent on the type and end use of the product, the final destination, the identity of the end user and whether a license exception might apply. Certain of our solutions are subject to EAR. Obtaining export licenses can be difficult, costly and time-consuming and we may not always be successful in obtaining necessary export licenses, and our failure to obtain required import or export approval for our products or limitations on our ability to export or sell our products imposed by these laws may harm our international and domestic revenue. Noncompliance with these laws could have negative consequences, including government investigations, penalties and reputational harm. The absence of comparable restrictions on competitors in other countries may adversely affect our competitive position.

We derived 0.7% and 0.1% of our revenue in the form of royalties in 2022 and 2021, respectively, from parties that are subject to the Entity List of the EAR (a list of entities to which the transfer of EAR-controlled technology or software requires a U.S. export license), including Chongxin Bada Technology Development Co., Ltd. (Bada), HiSilicon Technologies Co. Ltd. (HiSilicon), and SZ DJI Technology Co., Ltd. Current and future business with these entities may be limited in scope or suspended entirely in order to comply with the EAR and as a result, our revenue could be adversely impacted. Regulatory changes concerning the export classification of our products, changes to the applicability of the EAR to certain product offerings, or the addition of new entities to the restricted party lists can further increase the scope of export restrictions applicable to our business. Failure to obtain export licenses for our products or having one or more of our customers be restricted from receiving exports from us could significantly reduce our revenue and harm our business.

In addition, the U.S. federal government has increased its Entity List materially in recent years, which affects the range and number of customers, including Chinese customers available to license our products and technology. This raises an additional risk that China and/or other jurisdictions may enact retaliatory legislation or regulations that may raise similar adverse risks. As reflected in other Risk Factors, such risks may increase if additional Chinese entities are placed on the Entity List due, among other things, to their business with Russia in light of China's stance and actions taken relating to Russia-Ukraine tensions and hostilities.

In July 2021, we submitted a voluntary self-disclosure (VSD) to the BIS, noting potential violations of the EAR. On April 28, 2022, the Office of Export Enforcement of the BIS closed the matter with the issuance of a warning letter. In our VSD submission, we had identified discrete transactions with two customers, Bada and HiSilicon. We do not provide either customer with products or ongoing support. We have taken and continue to take remedial measures to help prevent similar situations from occurring in the future.

We face risks associated with doing business in China.

For the twelve months ended December 31, 2022, we derived 28.8% of our revenue from customers located in China. As a result, the economic, political, legal and social conditions in China could harm our business. In recent years, the Chinese economy has experienced periods of rapid expansion and high rates of inflation. These factors have led to the adoption by the Chinese government, from time to time, of various corrective measures designed to restrict the availability of credit or regulate growth and contain inflation. Various factors may in the future cause the Chinese government to impose controls on credit or prices, or to take other action, which could inhibit economic activity in China, and thereby harm the market for our products. In addition, the legal system in China has inherent uncertainties that may limit the legal protections available in the event of any claims or disputes that we have with third parties, including our ability to protect the IP we develop in China or elsewhere. As China's legal system is still evolving, the interpretation of many laws, regulations and rules is not always uniform and enforcement of these laws, regulations and rules involve uncertainties, which may limit the remedies available in the event of any claims or disputes with third parties. In addition, any litigation in China may be protracted and result in substantial costs and diversion of resources and management attention. Some of the other risks related to doing business in China include:

- The Chinese government exerts substantial influence over the manner in which we must conduct our business activities.
- Restrictions on currency exchange may limit our ability to receive, transfer and use our cash effectively.
- Increased uncertainties related to the enforcement of IP rights including any IP rights that we may license to a Chinese (or other emerging jurisdiction) entity, including any joint ventures we may form.
- Increased uncertainties relating to Chinese regulation of exports of products and technology to and from China.
- Increased and rapidly changing export and related trade regulations and restrictions imposed by U.S. and Chinese legislation, executive actions and regulations.
- Difficulty of travel to and from China (and to and from United States) arising from or related to the COVID-19 pandemic or any future pandemic.
- The Chinese government may favor its local businesses and make it more difficult for foreign businesses to operate in China on an equal footing, or create generally difficult conditions for foreign headquartered businesses to operate.
- Increased uncertainties related to the enforcement of contracts with certain parties.
- More restrictive rules on foreign investment could adversely affect our ability to expand our operations in China.
- Geopolitical tensions between China on the one hand and the United States and/or the European Union on the other hand, may increase and may lead to increased export sanctions with Chinese entities and sanctions made against China.

As a result of our growing operations in China, these risks could harm our business.

Further, on June 3, 2021, the President issued Executive Order 14032 (Addressing the Threat from Securities Investments that Finance Certain Companies of the People's Republic of China) targeting entities that are deemed part of the Chinese military-industrial complex. The executive order, and the subsequent Office of Foreign Assets Control additions to its Non-SDN Chinese Military-Industrial Complex Companies List, include one or more entities that have indirectly invested in us. Among other things, this executive order prohibits the purchase or sale of any publicly traded securities of a designated entity. We do not expect that this executive order will impact us; however, further government escalation of restrictions related to Chinese investors and dealings in securities could harm certain shareholders.

Additionally, on October 7, 2022, the Bureau of Industry and Security issued new export controls related to the Chinese semiconductor manufacturing, advanced computing, and supercomputer industries. The new export controls impose broad end-use and other restrictions on facilities in China that develop or produce semiconductor chips or manufacturing equipment, and may impact our ability to license or support our products to entities in or doing business with certain advanced AI or “supercomputer” design companies, foundries and manufacturers of assemblies and components in China. These restrictions, and any subsequent restrictions, may have an adverse effect on our business, results of operations, or financial condition and we currently anticipate that we may no longer be able to license or support our products to certain Chinese companies. Furthermore, increased restrictions on China exports may lead to regulatory retaliation by the Chinese government and possibly further escalate geopolitical tensions, and any such scenarios may adversely impact our business. The prospect of future export controls that are implemented in a similar manner may continue to have an ongoing impact on our business, results of operation, or financial conditions.

We anticipate conducting certain of our operations through joint venture arrangements with Chinese entities. If the Chinese government determines that these arrangements do not comply with applicable regulations, our business could be adversely affected. If the PRC regulatory agencies determine that the agreements that establish the structure and relationship for our operations in China do not comply with PRC regulatory restrictions on foreign investment, we could be subject to severe penalties. In addition, changes in such Chinese laws and regulations may materially and adversely affect our business.

There are uncertainties regarding the interpretation and application of PRC laws, rules and regulations, including, but not limited to, the laws, rules and regulations governing the validity and enforcement of the joint venture arrangement such as the one we are contemplating entering into with certain Chinese entities, including one of our shareholders who holds less than 5% of our outstanding common stock. Because many laws and regulations are relatively new, the interpretations of many laws, regulations and rules are not always uniform. Moreover, the interpretation of statutes and regulations may be subject to government policies reflecting domestic political agendas. Enforcement of existing laws or contracts based on existing law may be uncertain and sporadic. Although we believe, based on our understanding of the current PRC laws, rules and regulations, the structure for our current and contemplated operations based in China complies with all applicable PRC laws, rules and regulations and does not violate, breach, contravene or otherwise conflict with any applicable PRC laws, rules or regulations, we cannot assure you that the PRC regulatory authorities will not determine that such joint venture arrangements do not violate PRC laws, rules or regulations. If the PRC regulatory authorities determine that any joint ventures we may enter into are in violation of applicable PRC laws, rules or regulations, such joint venture arrangements may become invalid or unenforceable, which will substantially affect our operations adversely.

The Chinese government has broad discretion in dealing with violations of laws and regulations, including levying fines, revoking business and other licenses and requiring actions necessary for compliance. In particular, licenses and permits issued or granted by relevant governmental agencies may be revoked at a later time by other regulatory agencies. We cannot predict the effect of the interpretation of existing or new Chinese laws or regulations on our business. Any of these or similar actions could significantly disrupt our operations or restrict us from conducting a substantial portion of our operations, which could materially and adversely affect our business, financial condition and results of operations. There can be no assurance that the U.S. government will refrain from imposing additional restrictions or constraints on dealings or investments in China, including our investment in Transchip or any future joint venture arrangements.

Joint ventures or similar investments are subject to a number of risks, the occurrence of which could adversely impact any of our current or future joint ventures or similar investments, which in turn could harm our business.

Joint ventures or similar investments such as the investment in Transchip as discussed elsewhere in this report, and other joint ventures or similar investments we may form in the future are subject to a number of risks, including but not limited to:

- Our joint venture or investment partners may not commit sufficient resources to market and distribute our products or to otherwise support the joint venture and its intended operations.
- Our joint venture or investment partners may have economic or business interests or goals that are different from ours.
- Our joint venture or investment partners may infringe the IP we assign to such joint venture, or the IP of other parties, which may expose us to litigation and other potential liabilities.
- Disputes may arise among us and our joint venture or investment partners that result in the delay or termination of activities contemplated by such joint venture or investment or that could result in costly litigation or arbitration that diverts management attention and resources.

- Our joint venture or investment partners may not provide us with timely and accurate information regarding the status or activities of the joint venture or investment which could, among other things, impact our ability to accurately forecast financial results or provide timely information to our shareholders.
- Risks associated with additional capital requirements.
- Any of the risks related to doing business in China or having a Chinese joint venture or investment that are discussed elsewhere in these risk factors.

The occurrence of one or more of the above risks, or any other negative events, could adversely impact our joint ventures or similar investments and could in turn harm our business.

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

There is an increasing focus on corporate social and environmental responsibility in the semiconductor industry. A number of our customers have adopted, or may adopt, procurement policies that include social and environmental responsibility provisions or requirements that their suppliers should comply with, or they may seek to include such provisions or requirements in their procurement terms and conditions. An increasing number of investors are also requiring companies to disclose corporate social and environmental policies, practices and metrics. Legal and regulatory requirements, as well as investor expectations, on corporate social responsibility practices and disclosure, are subject to change, can be unpredictable, and may be difficult and expensive for us to comply with, given the complexity of our supply. If we are unable to comply, or are unable to cause our suppliers to comply, with such policies or provisions or meet the requirements of our customers and our investors, a customer may stop purchasing products from us or an investor may sell their shares, and may take legal action against us, which could harm our reputation, revenue and results of operations.

We could be subject to changes in tax rates or the adoption of new tax legislation, whether in or out of the United States, or could otherwise have exposure to additional tax liabilities, which could harm our business.

As a multinational business, we are subject to income and other taxes in both the United States and various foreign jurisdictions. Changes to tax laws or regulations in the jurisdictions in which we operate, or in the interpretation of such laws or regulations, could, significantly increase our effective tax rate and reduce our cash flow from operating activities, and otherwise have a material adverse effect on our financial condition. In addition, other factors or events, including business combinations and investment transactions, changes in the valuation of our deferred tax assets and liabilities, adjustments to taxes upon finalization of various tax returns or as a result of deficiencies asserted by taxing authorities, increases in expenses not deductible for tax purposes, changes in available tax credits, changes in transfer pricing methodologies, other changes in the apportionment of our income and other activities among tax jurisdictions, and changes in tax rates, could also increase our effective tax rate.

Our tax filings are subject to review or audit by the U.S. Internal Revenue Service (the IRS) and state, local and foreign taxing authorities. We may also be liable for taxes in connection with businesses we acquire. Our determinations are not binding on the IRS or any other taxing authorities, and accordingly the final determination in an audit or other proceeding may be materially different than the treatment reflected in our tax provisions, accruals and returns. An assessment of additional taxes because of an audit could harm our business.

Further changes in the tax laws of foreign jurisdictions could arise, in particular, as a result of the base erosion and profit shifting project that was undertaken by the Organization for Economic Co-operation and Development (the OECD). The OECD, which represents a coalition of member countries, recommended changes to numerous long-standing tax principles. These changes, if adopted, could increase tax uncertainty and may adversely affect our provision for income taxes and increase our tax liabilities.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

We have incurred cumulative losses historically and it is possible that we will not achieve profitability in the future. Realization of our existing net operating loss (NOL) carryforwards and other tax attributes (such as research tax credits) depends on future taxable income, and there is a risk that our NOL carryforwards and other tax attributes could expire unused before we achieve profitability and be unavailable to offset future taxable income, which could materially and adversely affect our operating results.

In general, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code), if a corporation undergoes an “ownership change,” generally defined as a cumulative change of more than 50 percentage points (by value) in its equity ownership by certain stockholders over a three-year period, the corporation’s ability to use its pre-change NOL carryforwards and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. We may have experienced ownership changes in the past and may experience additional ownership changes in the future, including as a result of subsequent changes in our stock ownership, some of which are outside our control. Accordingly, we may not be able to utilize a material portion of our NOL carryforwards, even if we achieve profitability.

The requirements of being a public company require significant resources and management attention and affect our ability to attract and retain executive management and qualified board members.

As a public company, we incur increased legal, accounting, compliance and other expenses that we did not previously incur as a private company. We are subject to the Exchange Act, including the reporting requirements thereunder, the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the rules and other applicable securities rules and regulations. These rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel need to devote a substantial amount of time to these compliance initiatives, which divert their attention away from our core business operations and revenue-producing activities. Moreover, compliance with these rules and regulations increases our legal and financial compliance costs, makes some activities more difficult, time-consuming or costly and increases demand on our systems and resources, particularly after we are no longer an “emerging growth company.” Further, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain directors’ and officers’ liability insurance, which in turn could require us to incur substantially higher costs to obtain the same or similar coverage or accept reduced policy limits and coverage, which, if we accept such reduced policy limits and coverage, could make it more difficult for us to attract and retain qualified individuals to serve on our board of directors and as our executive officers. In addition, prior to our initial public offering, we were not required to comply with SEC requirements to have our financial statements completed and reviewed or audited within a specified time and, as such, we may experience difficulty in meeting the applicable reporting requirements under the Exchange Act. Any failure by us to file our periodic reports with the SEC in a timely manner could harm our reputation and reduce the trading price of our common stock.

We continue to evaluate these rules and regulations and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. These rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. In addition, if we fail to comply with these rules and regulations, we could be subject to a number of penalties, including the delisting of our common stock, fines, sanctions or other regulatory action or civil litigation.

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. Our disclosure controls and other procedures are designed to ensure that information required to be disclosed by us in the reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers, and we continue to evaluate how to improve controls. We are also continuing to improve our internal control over financial reporting. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, weaknesses in our disclosure controls and internal control over financial reporting may be discovered in the future. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could harm our business or cause us to fail to meet our reporting obligations and may result in a restatement of our financial statements for prior periods. Any failure to implement and maintain effective internal control over financial reporting also could adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we are required to include in our periodic reports that will be filed with the SEC. Ineffective disclosure controls and procedures and internal control over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our common stock. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed. As a public company, we are required to provide an annual management report on the effectiveness of our internal control over financial reporting.

Our independent registered public accounting firm is not required to formally attest to the effectiveness of our internal control over financial reporting until after we are no longer an “emerging growth company” as defined in the JOBS Act. At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could harm our business and could cause a decline in the trading price of our common stock.

We are an “emerging growth company,” and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the JOBS Act, and we could remain an emerging growth company until the last day of our fiscal year following the fifth anniversary of the closing of our initial public offering. For as long as we continue to be an emerging growth company, we may choose to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including, but not limited to:

- not being required to engage an auditor to report on our internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements (i.e., an auditor discussion and analysis);
- not being required to submit certain executive compensation matters to stockholder advisory votes, such as “say-on-pay,” “say-on-frequency,” and “say-on-golden-parachutes”; and
- not being required to disclose certain executive compensation related items such as the correlation between executive compensation and performance and comparisons of the chief executive officer’s compensation to median employee compensation.

In addition, as an emerging growth company, we are only permitted to provide two years of audited financial statements and two years of selected financial data (in addition to any required interim financial statements and selected financial data) in this report, and to present correspondingly reduced disclosure in “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

We have elected to take advantage of this reduced disclosure obligation and certain of the other exemptions described above and may elect to take advantage of these and other reduced reporting requirements in the future. As a result, the information that we provide to our stockholders may be different than the information you might receive from other public reporting companies in which you hold equity interests. In addition, the JOBS Act permits emerging growth companies to delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards until the earlier of the date we (i) are no longer an emerging growth company; or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements and the reported results of operations contained therein may not be directly comparable to those of other public companies. We cannot predict whether investors will find our common stock less attractive because of our reliance on these exemptions. If some investors do find our common stock less attractive, there may be a less active trading market for our common stock and our stock price may be reduced or become more volatile.

We will remain an emerging growth company, and will be able to take advantage of the foregoing exemptions, until the last day of our fiscal year following the fifth anniversary of the closing of our initial public offering or such earlier time that we otherwise cease to be an emerging growth company, which will occur upon the earliest of (i) the last day of the first fiscal year in which our annual gross revenue are \$1.235 billion or more; (ii) the date on which we have, during the previous three-year period, issued more than \$1.0 billion in non-convertible debt securities; and (iii) the date that we become a “large accelerated filer” as defined in Rule 12b-2 under the Exchange Act, which will occur as of the end of any fiscal year in which (x) the market value of our common equity held by non-affiliates is \$700 million or more as of the last business day of our most recently completed second fiscal quarter, (y) we have been required to file annual and quarterly reports under the Exchange Act for a period of at least 12 months and (z) we have filed at least one annual report pursuant to the Exchange Act.

Risks Related to Ownership of Our Common Stock

An active and liquid trading market for our common stock may not be sustained.

Our common stock is currently listed on the Nasdaq Stock Market under the symbol “AIP”. The price for our common stock may vary and an active or liquid market in our common stock may not be sustained. The lack of an active market may impair the value of your shares, your ability to sell your shares at the time you wish to sell them and the prices that you may obtain for your shares. An inactive market may also impair our ability to raise further capital by selling additional shares of our common stock and our ability to acquire other companies, products or technologies by using our common stock as consideration. Furthermore, there can be no guarantee that we will continue to satisfy the continued listing standards of Nasdaq. If we fail to satisfy the continued listing standards, we could be de-listed, which would negatively impact the value and liquidity of your investment.

Our stock price may be volatile, and investors in our common stock may not be able to resell shares of our common stock at or above the price paid, or at all.

The trading price of our common stock could be volatile and subject to wide fluctuations in response to various factors, many of which are beyond our control, including, but not limited to:

- variations in our actual or anticipated annual or quarterly operating results or those of others in our industry;
- the potential effects arising if U.S. inflationary and/or currency devaluation trends appear or increase;
- results of operations that otherwise fail to meet the expectations of securities analysts and investors;
- changes in earnings estimates or recommendations by securities analysts, or other changes in investor perceptions of the investment opportunity associated with our common stock relative to other investment alternatives;
- market conditions in the semiconductor industry;
- failure to meet our publicly announced guidance or other expectations about our business;
- publications, reports or other media exposure of our products or those of others in our industry, or of our industry generally;
- announcements by us or others in our industry, or by our or their respective suppliers, distributors or other business partners, regarding, among other things, significant contracts, price reductions, capital commitments or other business developments, the entry into or termination of strategic transactions or relationships, securities offerings or other financing initiatives, and public reaction thereto;
- additions or departures of key management personnel;
- regulatory actions involving us or others in our industry, or actual or anticipated changes in applicable government regulations or enforcement thereof;
- the development and sustainability of an active trading market for our common stock;
- sales, or anticipated sales, of large blocks of our common stock, such as any sales that may occur following the expiration of the lockups entered into in connection with our initial public offering or any sales to cover tax obligations or exercise costs in connection with the vesting of restricted stock units or the exercise of options, respectively;
- general economic and securities market conditions; and
- other factors discussed in this “Risk Factors” section and elsewhere in this report.

Furthermore, the stock market in general has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of particular companies. Broad market and industry factors may significantly affect the market price of our common stock, regardless of our actual operating performance.

These and other factors may cause the market price and demand for our common stock to fluctuate significantly, which may limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the liquidity of our common stock. In addition, in the past, when the market price of a stock has been volatile, holders of that stock have sometimes instituted securities class action litigation against the company that issued the stock. If any of our stockholders were to bring a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management from our core business operations.

Since our stock price may be volatile, investors in our common stock may not be able to resell shares of our common stock at or above the price paid, or at all.

We may fail to meet our publicly announced guidance or other expectations about our business, which could cause our stock price to decline.

We provide guidance regarding our expected financial and business performance including our anticipated future revenues, operating expenses and other financial metrics. Correctly identifying the key factors affecting business conditions and predicting future events is inherently uncertain. Any guidance that we provide may not always be accurate, or may vary from actual results due to our inability to correctly identify risks and uncertainties and to quantify their impact on our financial performance. We provide no assurances that such guidance will ultimately be accurate, and any such guidance should be treated with appropriate caution. If we fail to meet our guidance or if we find it necessary to revise such guidance, even if seemingly insignificant, investors and analysts may lose confidence in us and the market value of our common stock could be materially adversely affected.

If equity research analysts or industry analysts do not publish research or reports about our business, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that industry or equity research analysts publish about us or our business. As a newly public company, we may be slow to attract research coverage and the analysts who publish information about our common stock will have had relatively little experience with us, which could affect their ability to accurately forecast our results and could make it more likely that we fail to meet their estimates. If only a few securities or industry analysts commence coverage of us, the trading price for our common stock will be negatively impacted. When we obtain industry or equity research analyst coverage, we will not have any control over the analysts' content and opinions included in their reports. If any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, financial performance, stock price or otherwise, our stock price would likely decline. If one or more of these analysts ceases coverage of our company or fails to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline and result in the loss of all or a part of your investment in us.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market, the market price of our common stock could decline. As of December 31, 2022, we had approximately 34.6 million shares of common stock outstanding.

Shares of common stock that are either subject to outstanding options or reserved for future issuance pursuant to restricted stock unit grants, in each case, under our equity incentive plans are eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules and Rule 144 and Rule 701 under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

In addition, certain of our executive officers, directors and stockholders affiliated with our directors have entered or may enter into Rule 10b5-1 plans providing for sales of shares of our common stock from time to time. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the executive officer, director or affiliated stockholder when entering into the plan, without further direction from the executive officer, director or affiliated stockholder. A Rule 10b5-1 plan may be amended or terminated in some circumstances. Our executive officers, directors and stockholders affiliated with our directors also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information.

Our executive officers, directors and principal shareholders, including in particular K. Charles Janac, our President, Chief Executive Officer and Chairman, beneficially own a significant percentage of our stock and if they choose to act together, will be able to exert significant influence over matters subject to stockholder approval.

As of December 31, 2022, K. Charles Janac, our President, Chief Executive Officer and Chairman, held voting power over approximately 30.4% of our outstanding voting stock. Therefore, this stockholder will have the ability to influence us through this ownership position. For example, this stockholder may be able to exercise significant influence over elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders.

In addition, as of December 31, 2022, our executive officers, directors and greater than 5% shareholders, in the aggregate, beneficially owned approximately 44.0% of our outstanding voting stock. As a result, such persons, acting together, will have the ability to significantly influence all matters submitted to our board of directors or shareholders for approval, including the appointment of our management, the election and removal of directors and approval of any significant transaction, as well as our management and business affairs. This concentration of ownership may have the effect of delaying, deferring or preventing a change in control, impeding a merger, consolidation, takeover or other business combination involving us, or discouraging a potential acquiror from making a tender offer or otherwise attempting to obtain control of our business, even if such a transaction would benefit other shareholders.

Our issuance of additional capital stock in connection with financings, acquisitions, investments, our stock incentive plans or otherwise could dilute the ownership and voting power of our other stockholders.

We have 300,000,000 shares of common stock authorized as of December 31, 2022. In addition, our Certificate of Incorporation authorizes us to issue up to 10,000,000 shares of preferred stock with such rights and preferences as may be determined by our board of directors. Our Certificate of Incorporation authorizes us to issue shares of common stock or other securities convertible into or exercisable or exchangeable for shares of our common stock from time to time, for the consideration and on the terms and conditions established by our board of directors in its sole discretion, whether in connection with a financing, an acquisition, an investment, our stock incentive plans or otherwise. Such additional shares of our common stock or such other securities may be issued at a discount to the market price of our common stock at the time of issuance. Our preferred stock could be issued with voting, liquidation, dividend and other rights superior to the rights of our common stock. As discussed below, the potential issuance of preferred stock may delay or prevent a change in control of us, discourage bids for our common stock at a premium to the market price, and materially and adversely affect the market price and the voting and other rights of the holders of our common stock. Any issuance of such securities could result in substantial dilution to our existing stockholders and cause the market price of shares of our common stock to decline.

We do not expect to declare or pay any dividends on our common stock for the foreseeable future.

We do not intend to pay cash dividends on our common stock for the foreseeable future. Consequently, investors must rely on sales of their shares of our common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment. Investors seeking dividends should not purchase shares of our common stock. Any future determination to pay dividends will be at the discretion of our board of directors and subject to, among other things, our compliance with applicable law, and depending on, among other things, our business prospects, financial condition, results of operations, cash requirements and availability, debt repayment obligations, capital expenditure needs, the terms of any preferred equity securities we may issue in the future, covenants in the agreements governing our current and future indebtedness, other contractual restrictions, industry trends, the provisions of the Delaware General Corporation Law (the DGCL) affecting the payment of dividends and distributions to stockholders and any other factors or considerations our board of directors may regard as relevant. Furthermore, because we are a holding company, our ability to pay dividends on our common stock will depend on our receipt of cash distributions and dividends from our direct and indirect wholly owned subsidiaries, which may be similarly impacted by, among other things, the terms of any preferred equity securities these subsidiaries may issue in the future, debt agreements, other contractual restrictions and provisions of applicable law. See "Dividend Policy" for additional information.

Management may apply our net proceeds from our initial public offering to uses that do not increase our market value or improve our operating results.

Our management has broad discretion in the application of the net proceeds from our initial public offering and could use these proceeds in ways that do not improve our results of operations or enhance the value of our common stock. We intend to use these proceeds for general corporate purposes. We may also use a portion of our net proceeds to acquire or invest in complementary businesses, products, services or technologies, though we do not have any agreements or commitments for any significant acquisitions or investments at this time. We have not reserved or allocated our net proceeds for any specific purpose, and we cannot state with certainty how our management will use our net proceeds. Accordingly, our management will have considerable discretion in applying our net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether we are using our net proceeds appropriately. We may use our net proceeds for purposes that do not result in any improvement in our results of operations or increase the market value of our common stock. The failure by our management to apply the net proceeds from our initial public offering effectively could impair our growth prospects and result in financial losses that could harm our business and cause the price of our common stock to decline. Until the net proceeds we receive are used, they may be placed in investments that do not produce income or that lose value.

Provisions in our Certificate of Incorporation and Bylaws and under the DGCL contain antitakeover provisions that could prevent or discourage a takeover.

Provisions in our Certificate of Incorporation and our Bylaws may discourage, delay or prevent a merger, acquisition or other change in control of our company that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions include those establishing:

- a classified board of directors with three-year staggered terms, which may have the effect of deferring, delaying or discouraging hostile takeovers, or changes in control of us or our management;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from filling vacancies on our board of directors;
- the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the ability of our board of directors to alter our bylaws without obtaining stockholder approval;
- the required approval of the holders of at least two-thirds of the shares entitled to vote at an election of directors to amend or repeal our bylaws or amend the provisions of our Certificate of Incorporation regarding the election and removal of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairman of the board of directors or a majority of our board of directors, which may delay the ability of our stockholders to force consideration of a proposal or for stockholders controlling a majority of our capital stock to take action, including the removal of directors; and
- advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at an annual meeting or special meeting of stockholders, which may discourage or delay a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us until the next stockholder meeting or at all.

In addition, we are subject to Section 203 of the DGCL. Subject to specified exceptions, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder unless such transaction is approved in a prescribed manner. “Business combinations” include mergers, asset sales and other transactions resulting in a financial benefit to the “interested stockholder.” Subject to various exceptions, an “interested stockholder” is a person who, together with his or her affiliates and associates, owns, or within three years did own, 15% or more of the corporation’s outstanding voting stock.

Any provision of our Certificate of Incorporation, Bylaws or Delaware law that has the effect of delaying or preventing a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock and could also affect the price that some investors are willing to pay for our common stock.

Our Certificate of Incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders’ ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our Certificate of Incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (the Delaware Court of Chancery) will be the exclusive forum for (1) any derivative action or proceeding brought on our behalf; (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees or stockholders to us or our stockholders; (3) any action asserting a claim against us, any director or our officers and employees arising pursuant to any provision of the DGCL, our Certificate of Incorporation or our Bylaws, or as to which the DGCL confers exclusive jurisdiction on the Delaware Court of Chancery; or (4) any action asserting a claim against us, any director or our officers or employees that is governed by the internal affairs doctrine; provided that, the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Securities Act, the Exchange Act, the rules and regulations thereunder or any other claim for which the federal courts have exclusive jurisdiction; and provided further that, if and only if the Delaware Court of Chancery dismisses any such action for lack of subject matter jurisdiction, such action may be brought in another state or federal court sitting in the State of Delaware. Our Certificate of Incorporation further provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions of our Certificate of Incorporation described above.

We believe these provisions benefit us by providing increased consistency in the application of the DGCL by chancellors particularly experienced in resolving corporate disputes and in the application of the Securities Act by federal judges, as applicable, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. However, these provisions may limit a stockholder’s ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees or agents, which may discourage such lawsuits against us and our directors, officers and other employees and agents. The enforceability of similar choice of forum provisions in other companies’ certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any applicable action brought against us, a court could find the choice of forum provisions contained in our Certificate of Incorporation to be inapplicable or unenforceable in such action. If a court were to find the choice of forum provision contained in our Certificate of Incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business.

General Risk Factors

Actions of stockholders could cause us to incur substantial costs, divert management’s attention and resources and have an adverse effect on our business.

As a public company, we may, from time to time, be subject to proposals and other requests from stockholders urging us to take certain corporate actions, including proposals seeking to influence our corporate policies or effect a change in our management. In the event of such stockholder proposals, particularly with respect to matters which our management and board of directors, in exercising their fiduciary duties, disagree with or have determined not to pursue, our business could be harmed because responding to actions and requests of stockholders can be costly and time-consuming, disrupting our operations and diverting the attention of management and our employees. Additionally, perceived uncertainties as to our future direction may result in the loss of potential business opportunities and may make it more difficult to attract and retain qualified personnel, business partners and customers.

Litigation, including securities class action litigation, may impair our reputation and lead us to incur significant costs.

From time to time, we may be party to various lawsuits and claims arising in the normal course of business, which may include lawsuits or claims relating to contracts, third-party contractors, IP, employment matters or other aspects of our business. We may face claims based on IP rights from individuals, companies, non-practicing entities, academic and research institutions, and other parties, including claims from multiple sources against us and other companies. Claims that our products infringe the IP rights of others, regardless of merit, may cause us to incur large costs to respond to, defend and resolve the claims, and they may divert the efforts and attention of our management and technical personnel from our operations.

In addition, in the past, following periods of volatility in the overall market and the market price of a company's securities, securities class action litigation has often been instituted against companies that experienced such volatility. Litigation, if instituted against us, whether or not valid and regardless of outcome, could result in substantial costs, reputational harm and a diversion of our management's attention and resources. In addition, we may be required to pay damage awards or settlements or become subject to injunctions or other equitable remedies, which could harm our business. The outcome of litigation is often difficult to predict, and any litigation may harm our business.

Although we have various insurance policies in place, the potential liabilities associated with litigation matters now or that could arise in the future, could be excluded from coverage or, if covered, could exceed the coverage provided by such policies. In addition, insurance carriers may seek to rescind or deny coverage with respect to any claim or lawsuit. If we do not have sufficient coverage under our policies, or if coverage is denied, we may be required to make material payments to settle litigation or satisfy any judgment. Any of these consequences could harm our business.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our principal executive office is located in Campbell, California. We currently lease offices in the United States in Campbell, California and Austin, Texas which consists of approximately 16,300 square feet of space. We also lease space in France, China, Japan and South Korea.

We lease all our facilities and do not own any real property. We believe our existing facilities are adequate and suitable for our current needs and that, should it be needed, suitable additional or alternative space will be available on commercially reasonable terms to accommodate our operations.

Item 3. Legal Proceedings

Refer to Note 12 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Price of Our Common Stock

Our common stock, par value \$0.001 per share, is listed on the Nasdaq Stock Market, under the symbol "AIP" and began trading on October 27, 2021. Prior to that date, there was no public trading market for our common stock.

Holders of Record

As of February 21, 2023, there were 345 stockholders of record of our common stock. The actual number of holders of our common stock is greater than the number of record holders and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers or other nominees. The number of holders of record presented here also does not include stockholders whose shares may be held in trust by other entities.

Dividend Policy

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all available funds and future earnings, if any, to fund the development and expansion of our business, and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination regarding the declaration and payment of dividends, if any, will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects, and other factors our board of directors may deem relevant.

Securities Authorized for Issuance under Equity Compensation Plans

The information required by this item is incorporated by reference to the definitive Proxy Statement for our 2023 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after December 31, 2022.

Recent Sales of Unregistered Equity Securities

On December 27, 2022, we issued an aggregate of 663,143 shares of our common stock to eight accredited investors at \$3.77 per share, for an aggregate consideration of approximately \$2.5 million, in connection with our acquisition of Semifore, Inc.

Unless otherwise stated, the issuances of the above securities were deemed to be exempt from registration under the Securities Act in reliance upon Section 4(a)(2) of the Securities Act. Individuals who purchased securities as described above represented their intention to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were affixed to the share certificates issued in such transactions.

Use of Proceeds

Our Registration Statement on Form S-1, as amended (File No. 333-259988) (the Form S-1), for our IPO was declared effective by the SEC on October 26, 2021. The Form S-1 registered the offering and sale of 5,750,000 shares of common stock. On October 29, 2021, we completed our IPO, in which we issued 5,750,000 shares of common stock at a price to the public of \$14.00 per share, including 750,000 shares issued upon the full exercise of the underwriters' option to purchase additional shares. We received net proceeds of approximately \$71.1 million after deducting underwriting discounts and commissions and offering costs of approximately \$3.8 million.

Jefferies LLC and Cowen served as lead book-running managers and BMO Capital Markets served as joint book-running manager for the offering. Northland Capital Markets and Rosenblatt Securities acted as co-managers.

No payments were made to our directors or officers or their associates, holders of 10% or more of any class of our equity securities or any affiliates in connection with the issuance and sale of the securities registered.

There has been no material change in the planned use of proceeds from our IPO as described in our Final Prospectus for the IPO dated as of October 26, 2021 and filed with the SEC pursuant to Rule 424(b)(4) on October 28, 2021.

Issuer Purchases of Equity Securities

None.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included under Part II, Item 8 in this Annual Report on Form 10-K. This discussion and analysis contains forward-looking statements based upon current beliefs, plans and expectations that involve risks, uncertainties and assumptions, such as statements regarding our plans, objectives, expectations, intentions and projections. Our actual results and the timing of selected events could differ materially from those anticipated in these forward-looking statements as a result of several factors, including those set forth under the heading "Risk Factors" and elsewhere in this Annual Report on Form 10-K. You should carefully read the "Risk Factors" section of this Annual Report on Form 10-K to gain an understanding of the important factors that could cause actual results to differ materially from forward-looking statements. Please also see the section titled "Cautionary Note Regarding Forward-Looking Statements."

Unless the context otherwise requires, all references in this report to "we," "us," "our," the "Company," and "Arteris" refer to Arteris, Inc. and its subsidiaries.

Overview

We are a leading provider of System IP, including interconnect and other intellectual property, (collectively, IP) technology that connects client IP blocks such as processors, memories, artificial intelligence/machine learning (AI/ML) accelerators, graphics subsystems, safety and security and other input/output (I/Os) subsystems via multiple Network-on-Chips (NoCs) in order for our customers to create System-on-Chips (NoC) (SoCs) semiconductors faster, better, and a lower cost. Our products enable our customers to deliver increasingly complex SoCs that not only process data but are also able to make decisions. Growth in the total addressable market for our solutions is being driven by the addition of more processors, channels of memory access, machine learning sections, chiplets, additional I/Os interface standards and other subsystems within SoCs. The growth in the numbers of these connected on-chip subsystems place an increasing premium on the interconnect IP capability to move data inside complex SoCs. We believe this increase in SoC complexity is creating a significant opportunity for sophisticated System IP solutions which incorporate NoC interconnect IP, IP deployment software and NoC interface IP (consisting of peripheral data transport IP and control plane networks connected to NoC interconnect IPs).

Our IP deployment solutions, which were significantly enhanced by our acquisition of Magillem Design Services S.A. (Magillem) in 2020, complement our interconnect IP solutions by helping to automate not only the customer configuration of its NoC interconnect but also the process of integrating and assembling all of the customer's IP blocks into an SoC. Products incorporating our IP are used to carry most of the important data inside complex SoCs for sophisticated applications, including automotive, enterprise computing, communications, consumer electronics, and industrial markets.

As of December 31, 2022, we had 245 full-time employees and offices in eight locations in the United States, France, China, South Korea and Japan. For the year ended December 31, 2022, we generated revenue of \$50.4 million, net loss of \$27.4 million and net loss per share – basic and diluted of \$0.84. As of December 31, 2022, we had Annual Contract Value (as defined below) of \$49.2 million. During the year ended December 31, 2022, we added 38 net new Active Customers (as defined below) and our customers had 82 Confirmed Design Starts (as defined below).

Initial Public Offering

In October, 2021, we completed our initial public offering (IPO), in which we issued and sold 5,750,000 shares of common stock at the public offering price of \$14.00 per share, including 750,000 shares issued upon the full exercise of the underwriters' option to purchase additional shares. We received net proceeds of \$71.1 million after deducting underwriting discounts and commissions and offering expenses. In connection with the IPO, all of the shares of our outstanding redeemable convertible preferred stock prior to the IPO automatically converted into an aggregate of 4,471,316 shares of common stock.

Deferred offering costs for the IPO were \$3.8 million and consisted primarily of direct incremental accounting, legal and other fees related to the IPO. Prior to the IPO, all deferred offering costs were capitalized and included in other assets, non-current on the consolidated balance sheets. Upon completion of the IPO, deferred offering costs were reclassified into stockholders' equity as a reduction of the IPO proceeds.

Acquisitions

On December 27, 2022, we completed our acquisition of Semifore, Inc., (Semifore) for a total consideration of \$3.1 million. Prior to the acquisition, Semifore was a privately held provider of hardware, software interface (HSI) technology. Semifore technologies are used to effectively design, verify, document, and help in the validation of the hardware-software integration that is used in the SoC complex chip market. The addition of Semifore technologies and team expertise augments Arteris System IP and IP deployment automation to further support software control of the IP and SoC hardware.

On November 30, 2020, Arteris IP, SAS, our wholly owned subsidiary, completed the acquisition of Magillem for a total consideration of \$7.8 million. Magillem is a leading provider of design flow and content management software solutions for the complex chip market. The primary reason for the acquisition was to integrate our technologies in order to accelerate and simplify the SoC assembly design flow and enhance innovation in both SoC IP integration software and the highly configurable on-chip interconnect IP that implements chip architectures.

Factors Affecting Our Business

We believe that the growth of our business and our future success are dependent upon many factors including those described under “Risk Factors” and elsewhere in this report, in addition to those described below. While each of these factors presents significant opportunities for us, these factors also pose challenges that we must successfully address in order to sustain the growth of our business and enhance our results of operations.

License Agreements with New and Existing Customers

Our ability to generate revenue from new license agreements, and the timing of such revenue, is subject to a number of factors, risks and contingencies. For new products, the time from initial development until we generate license revenue can be lengthy, typically between one and three years. In addition, because the selection process by our customers is typically lengthy and market requirements and alternative solutions available to customers for IP-based products change rapidly, we may be required to incur significant research and development expenditures in pursuit of new products over extended, multiyear periods of time with no assurance that our solutions will be successfully developed or ultimately selected by our customers. While we make efforts to observe market demand and market need trends, we cannot be certain that our investment in developing and testing new products will generate an adequate rate of return in the form of fees, royalties or other revenues, or any revenues. Moreover, the customer acquisition process has a typical duration of six to nine months; following this, a customer’s chip design cycle is typically between one to three years and may be delayed due to factors beyond our control, which may result in our customer’s product not reaching the market until long after we entered into a contract with such customer. Customers typically start shipping their products containing our interconnect IP solutions between one to five years following completion of their product design, known as mass production, at which point we start to receive royalties; this lasts for up to seven years depending on the market segment. Any significant delay in the ramp-up of volume production of the customer’s products into which our product is designed could adversely affect our business due to delayed or significantly reduced revenues. Further, because the average selling prices (ASPs) of our products may decline over time, we consider new license agreements and new product launches to be critical to our future success and anticipate that for our newer products, we are and will remain highly dependent on market demand timing and revenue from new license agreements.

End Customer Product Demand and Market Conditions

Demand for our interconnect IP solutions and associated royalty revenue is highly dependent on market conditions in the end markets in which our customers operate. These end markets, which include the automotive, enterprise computing, communications, consumer electronics, and industrial markets, are subject to a number of factors including end-product acceptance and sales, competitive pressures, supply chain issues and general market conditions. For example, our revenue has been supported by the increased need for more complex SoCs to enable sophisticated automated driving. If the demand in this market continues to grow, we anticipate it will continue to have a positive impact on our revenue. In contrast, if general market conditions deteriorate or other factors occur such as supply chain issues resulting in fewer semiconductors utilizing our IP solutions being available for sale, our revenue would be adversely affected.

Terms of our Agreements with Customers

Our revenue from period to period can be impacted by the terms of the agreements we enter into with our customers. For example, in recent periods we have structured certain agreements with customers that include substantial up front licensing payments. As a result of how these contracts are structured and the revenue is recognized, our revenue in the year ended December 31, 2022 may not be comparable to future periods if we do not enter into similar contractual agreements. Further, a meaningful percentage of our revenue is generated through royalty payments. Because the time between a new license agreement win and the customer's end product being sold can be substantial, with sales of the end product being subject to a number of factors outside our control, our revenue from royalties is difficult to predict. As a result of the foregoing, revenue may fluctuate significantly from period to period and any increase or decrease in such revenue may not be indicative of future period-to-period increases or decreases.

Technological Development and Market Growth

We believe our growth has been and will continue to be driven by technology trends in our end markets. For example, the requirements of smaller die size, lower power consumption, a higher frequency of operation and management of critical net latency in a timely and cost-effective manner for on-chip processing in the automotive, enterprise computing, communications, consumer electronics, and industrial markets has resulted in increased SoC design complexity for chips used in these markets. This trend in turn has created increased demand for in-licensing commercial semiconductor design IP, which in turn has positively impacted our revenue and growth.

In order to address technological developments such as the above and expand our offerings, we have invested significantly in our research and development efforts. These investments, which included growth in engineering headcount, have resulted in substantially increased research and development expenses in recent periods. As we continue to invest in our technology and new product design efforts, we anticipate research and development expense will increase on an absolute basis and as a percentage of revenue in the near term. In the medium to longer term, however, while we expect to increase our research and development expense on an absolute basis, we expect this expense to reduce as a percentage of revenue.

We will continue to evaluate growth opportunities through acquisitions of other businesses.

Impact of Operating Globally

We believe our products' global footprint provides us the opportunity to enter new markets and accelerate our growth. For 2022, 59.3% of our revenue was derived from sales to customers outside of the United States and 28.8% of our revenue was derived from customers located in China. For 2021, 56.9% of our revenue was derived from sales to customers outside of the United States. In particular, we derived 27.1% of our revenue in 2021 from customers located in China. While we believe operating internationally has beneficially impacted our results of operations, we are subject to inherent risks attributed to operating in a global economy. Further, our international operations have been, and may in the future continue to be, subject to restrictive government regulations. For example, U.S. export regulations, including regulations announced October 7, 2022 that impose broad end-use and other restrictions on doing business with certain customers and facilities in China that develop or produce semiconductor chips or manufacturing equipment, may limit or adversely impact our ability to license or support our products to entities in or doing business with certain advanced AI or "supercomputer" design companies, foundries and manufacturers of assemblies and components in China. As a result of these restrictions, we may face challenges to maintain our revenue and our revenue may decrease.

Cyclical Nature of the Semiconductor Industry

The semiconductor industry in which our customers operate is highly cyclical and is characterized by increasingly rapid technological change, product obsolescence, competitive pricing pressures, evolving standards, short product life cycles and fluctuations in product supply and demand. New technology may result in sudden changes in system designs or platform changes that may render some of our IP solutions obsolete and require us to devote significant research and development resources to compete effectively. Periods of rapid growth and capacity expansion are occasionally followed by significant market corrections in which our customers' sales decline, inventories accumulate and facilities go underutilized. During an expansion cycle, we may increase research and development hiring to add to our product offerings or spend more on sales and marketing to acquire new customers, such as during the recent cycle of expansion in which we increased the number of our engineers significantly. During periods of slower growth or industry contractions, our sales generally suffer due to a decrease in customers' Confirmed Design Starts or in sales of our customers' products.

COVID-19 Impact

While the duration and extent of the COVID-19 pandemic depends on future developments that cannot be accurately predicted at this time, such as the extent and effectiveness of containment actions and emergence of new variants, it has already had an adverse effect on the global economy and the lasting effects of the pandemic continue to be unknown. In response to the COVID-19 pandemic, the measures implemented by various authorities have caused us to change our business practices, including those related to where employees work, the distance between employees in our facilities, limitations on in-person meetings between employees and with customers, suppliers, service providers and stakeholders, as well as restrictions on business travel to domestic and international locations and to attend trade shows, technical conferences and other events. Although we have experienced, and may continue to experience, some impact on certain parts of our business as a result of governmental restrictions and other measures to mitigate the spread of COVID-19, our results of operations, cash flows and financial condition were not materially adversely impacted the year ended December 31, 2022.

We are unable to accurately predict the full impact that COVID-19 will have on our future results of operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic and containment measures. Although we expect most of our employees to return to physical offices, the nature and extent of that return is uncertain and differs among jurisdictions such as China where restriction against returning to offices remain largely in effect. For additional details, see the section titled “Risk Factors—Our business has been, and may continue to be, adversely affected by health epidemics, pandemics and other outbreaks of infectious disease, including the current COVID-19 pandemic.”

Key Performance Indicators

We use the following key performance indicators to analyze our business performance and financial forecasts and to develop strategic plans, which we believe provide useful information to investors and others in understanding and evaluating our results of operations in the same manner as our management team. These key performance indicators are presented for supplemental informational purposes only, should not be considered a substitute for financial information presented in accordance with generally accepted accounting principles in the United States (GAAP), and may differ from similarly titled metrics or measures used by other companies, securities analysts, or investors.

Annual Contract Value

We define Annual Contract Value (ACV) for an individual customer agreement as the total fixed fees under the agreement divided by the number of years in the agreement term. Our total ACV is the aggregate ACVs for all our customers as measured at a given point in time. Total fixed fees include licensing, support and maintenance and other fixed fees under IP licensing or software licensing agreements but excludes variable revenue derived from licensing agreements with customers, particularly royalties. ACV was \$49.2 million and \$47.4 million as of December 31, 2022 and December 31, 2021, respectively. In addition, total ACV and trailing twelve months royalties and other revenue was \$52.4 million and \$50.0 million as of December 31, 2022 and 2021, respectively. We monitor ACV to measure our success and believe the increase in the number shows our progress in expanding our customers' adoption of our platform. ACV fluctuates due to a number of factors, including the timing, duration and dollar amount of customer contracts.

Active Customers and Customer Retention

We define Active Customers as customers who have entered into a license agreement with us that remains in effect. The retention and expansion of our relationships with existing customers are key indicators of our revenue potential. We added 38 and 29 net new Active Customers during each of the years ended December 31, 2022 and 2021, respectively. Our annual average customer retention rate, was 98% from December 31, 2021 to December 31, 2022.

Confirmed Design Starts

We define Confirmed Design Starts as when customers confirm their commencement of new semiconductor designs using our interconnect IP and notify us. Confirmed Design Starts is a metric management uses to assess the activity level of our customers in terms of the number of new semiconductor designs that are started using our interconnect IP in a given period. Our interconnect IP and NoC interface IP customers confirmed a total of 82 and 86 design starts during each of the years ended December 31, 2022 and 2021, respectively. We believe that the number of Confirmed Design Starts is an important indicator of the growth of our business and future royalty revenue trends.

Remaining Performance Obligations

We define Remaining Performance Obligations (RPO) as the amount of contracted future revenue that has not yet been recognized, including both deferred revenue and contracted amounts that will be invoiced and recognized as revenue in future periods.

The RPO amount is intended to provide visibility into future revenue streams. We expect RPO to fluctuate up or down from period to period for several reasons, including amounts, timing, and duration of customer contracts, as well as the timing of billing cycles for each contract. Our RPO was \$57.7 million and \$60.5 million as of December 31, 2022 and 2021, respectively.

Components of Our Results of Operations

Revenue: Our revenue is primarily derived from licensing intellectual property, licensing software, support and maintenance services, professional services, training services, and royalties. Our agreements often include other service elements including training and professional services which were immaterial for the years ended December 31, 2022 and 2021, respectively.

Our interconnect solutions product arrangements provide customers the right to software licenses, services, software updates and technical support. We enter into licensing arrangements with customers that typically range from two to three years and generally consist of delivery of a design license that grants the customer the right to use the IP to design a contractually defined number of products and stand-ready support services that provides the customer with our application engineer support services. We believe our customers derive a significant benefit from our engineer support services, which consist of our proprietary software tool (RTL), ongoing access to Corporate Application Engineers (CAE) and Field Application Engineers (FAE) that perform certain verifications including benchmark performance, simulations and ultimately, through RTL, instantiate designs into silicon over the design term.

The support services, including access to application engineering support services and the benefits of the RTL, are integral and fundamental to the customer's ability to derive its intended benefit from the IP.

CAEs are part of the product development team providing detailed requirements for engineering projects, working very closely with a customer's chief technology officer and the marketing department, and performing quality assurance testing of customer products prior to shipment to their customers.

FAEs provide assistance to the customer's engineering team in translating their desired SoC architecture into inputs for NoC IP configuration, assistance in optimizing the NoC configuration, answers to customer questions by the online support system or phone, constructive reviews of the progress achieved by the customer's development team and provision of advice on how to best use the licensed IP, performance of design reviews before customer project RTL freeze and tape-out to ensure the customer used the licensed IP configuration tooling as intended so that the RTL output meets customer requirements and expectations. FAE reviews of the customer's design are generally mandatory and consist of an understanding of the customer requirements and analysis of the adequacy of the contemplated IP considering the customer's desired architecture and design goals and objectives, taking into consideration bandwidth, coherence/non-coherence, latency, clock and timing, areas, and any and all constraints, as identified and specific to the design under review.

Besides application engineer support services, support and maintenance services also consist of a stand-ready obligation to provide technical support and software updates over the support term. Generally, the first-year of technical support and software updates are bundled with and into the license fee with a customer option to renew additional years of support throughout the license term. However, we continue to provide technical support and software updates throughout the license term even if the customer does not renew these services in subsequent years, making the license term and support and maintenance term co-terminus.

Revenues that are derived from the sale of a licensee's products that incorporate our IP are classified as royalty revenues. Royalty revenues are recognized during the quarter in which the sale of the product incorporating the IP occurs. Royalties are calculated either as a percentage of the revenues received by a licensee's sale of products incorporating the IP or on a per unit basis, as specified in the agreements with the licensees. For a majority of our royalty revenues, we receive the actual sales data from our customers after the quarter ends and account for it as unbilled receivables. When we do not receive actual sales data from the customer prior to the finalization of its financial statements, royalty revenues are recognized based on our estimation of the customer's sales during the quarter.

Our deployment solutions product and CSRCompiler product arrangements provide customers the right to software licenses, software updates and technical support. The software licenses are time-based licenses with terms generally ranging from one to three years. These arrangements generally have two distinct performance obligations that consist of transferring the licensed software and the support and maintenance service. Support and maintenance services consist of a stand-ready obligation to provide technical support and software updates over the support term. Revenue allocated to the software license is recognized at a point in time upon the later of the delivery date or the beginning of the license period, and revenue allocated to support services is recognized ratably over the support term.

Cost of revenue: Cost of revenue relates to costs associated with our licensing agreements and support and maintenance, including applicable FAE personnel-related costs such as stock-based compensation, travel, and allocated overhead. We expect cost of revenue as a percentage of revenue to modestly decline over time due to productivity improvements of our FAE processes.

Research and development (R&D) expenses: R&D expenses consist primarily of salaries and associated personnel-related costs, facilities expenses associated with research and development activities, third-party project-related expenses connected with the development of our intellectual property which are expensed as incurred, and stock-based compensation expense and other allocated costs. We expect R&D expenses to increase in absolute terms and as a percentage of revenue in the short term and to continue to increase in absolute terms in the medium to long term but decrease as a percentage of revenue as certain new products are launched.

Sales and marketing (S&M) expenses: S&M expenses consist primarily of salaries, commissions, travel and other costs associated with S&M activities, as well as advertising, trade show participation, public relations, and other marketing costs, stock-based compensation expenses and other allocated costs. We expect S&M expenses to increase in absolute terms but decrease as a percentage of revenue due to productivity improvements of our sales processes.

General and administrative (G&A) expenses: G&A expenses consist primarily of salaries for management and administrative employees, depreciation, insurance costs, accounting, legal and consulting fees, other professional service fees, expenses related to the development of corporate initiatives and facilities expenses associated with G&A activities and stock-based compensation expense, fees for directors and other allocated costs.

We incur additional expenses as a result of operating as a public company, including costs to comply with the rules and regulations applicable to companies listed on a national securities exchange, costs related to compliance and reporting obligations, and increased expenses for additional G&A personnel, directors and officers insurance, investor relations, and professional services. We expect G&A expenses to increase as our business grows. In addition, we expect G&A expenses as a percentage of revenue to vary from period to period but generally decrease over the long term.

Interest expense: Interest expense consists primarily of interest expense on our vendor financing arrangements.

Interest and other income (expense), net: Interest and other income (expense), net consists primarily of interest income earned on our cash and cash equivalents and available-for-sale investments, gains and losses from foreign currency exchange, gain on deconsolidation of subsidiary, realized gains and losses from available-for-sale investments as well as deferred income.

Loss from equity method investment: Loss from equity method investment consists of our proportionate share of net income (losses) from our equity method investee.

Provision for (benefit from) income taxes: Our income tax provision consists primarily of income taxes in certain foreign jurisdictions in which we conduct business and includes foreign non-recoverable withholding taxes. We have a full valuation allowance against our U.S. federal and state deferred tax assets as the realization of the full amount of these deferred tax assets is uncertain, including net operating loss carryforwards and tax credits related primarily to research and development. We expect to maintain this full valuation allowance until it becomes more likely than not that the deferred tax assets will be realized.

Results of Operations

The following table summarizes our GAAP results of operations for the periods presented. The results below are not necessarily indicative of results to be expected for future periods.

	Year ended December 31,	
	2022	2021
	<i>(in thousands)</i>	
Total revenue	\$ 50,378	\$ 37,864
Cost of revenue ⁽¹⁾	4,281	3,731
Gross profit	46,097	34,133
Operating expenses:		
Research and development ⁽¹⁾	41,167	30,812
Sales and marketing ⁽¹⁾	17,419	11,726
General and administrative ⁽¹⁾	16,367	13,360
Total operating expenses	74,953	55,898
Loss from operations	(28,856)	(21,765)
Interest expense	(89)	(105)
Interest and other income (expense), net	1,425	(474)
Loss before income taxes and loss from equity method investment	(27,520)	(22,344)
Loss from equity method investment, net of tax	(284)	—
Provision for (benefit from) income taxes	(417)	1,040
Net loss	\$ (27,387)	\$ (23,384)

(1) Includes stock-based compensation expense as follows:

	Year Ended December 31,	
	2022	2021
	<i>(in thousands)</i>	
Cost of revenue	\$ 562	\$ 218
Research and development	5,865	3,495
Sales and marketing	2,123	579
General and administrative	3,142	1,218
Total stock-based compensation expense	\$ 11,692	\$ 5,510

The following table summarizes our results of operations as a percentage of total revenue for each of the periods indicated:

	Year Ended December 31,	
	2022	2021
	<i>(as a percentage of total revenue)</i>	
Total revenue	100 %	100 %
Cost of revenue	8	10
Gross profit	92	90
Operating expenses:		
Research and development	82	81
Sales and marketing	35	31
General and administrative	32	36
Total operating expenses	149	148
Loss from operations	(57)	(58)
Interest expense	—	—
Interest and other income (expense), net	3	(1)
Loss before income taxes and loss from equity method investment	(54)	(59)
Loss from equity method investment, net of tax	(1)	—
Provision for (benefit from) income taxes	(1)	3
Net loss	(54)%	(62)%

Comparison of the Years Ended December 31, 2022 and 2021

Revenue

	Year Ended December 31,		Change	
	2022	2021	\$	%
	<i>(in thousands)</i>			
Licensing, support and maintenance	\$ 46,012	\$ 34,731	\$ 11,281	32 %
Variable royalties	3,140	2,647	493	19
Other	1,226	486	740	152
Total	\$ 50,378	\$ 37,864	\$ 12,514	33 %

Revenue from licensing, support and maintenance increased \$11.3 million during the year ended December 31, 2022 as compared to the year ended December 31, 2021. The increase was primarily due to an increase in new license agreements with existing customers, the addition of new customers as well as increased average selling prices. Growth in our variable royalty revenue during the year ended December 31, 2022 was primarily due to the production increase from existing customers.

Cost of revenue

	Year Ended December 31,		Change	
	2022	2021	\$	%
	<i>(in thousands)</i>			
Cost of revenue	\$ 4,281	\$ 3,731	\$ 550	15 %

The increase in cost of revenue during the year ended December 31, 2022 was primarily due to higher FAE employee-related stock-based compensation expense, primarily related to new grants in 2022.

Operating expenses

	Year Ended December 31,		Change	
	2022	2021	\$	%
	(in thousands)			
Research and development	\$ 41,167	\$ 30,812	\$ 10,355	34 %
Sales and marketing	17,419	11,726	5,693	49
General and administrative	16,367	13,360	3,007	23
Total operating expenses	\$ 74,953	\$ 55,898	\$ 19,055	34 %

Research and development expenses

R&D expenses increased, \$10.4 million, or 34%, to \$41.2 million for the year ended December 31, 2022 from \$30.8 million for the year ended December 31, 2021. The increase in R&D expenses was due to an increase in allocated costs of \$3.1 million, higher employee-related costs of \$5.4 million, including higher stock-based compensation expense of \$2.4 million primarily related to new grants in 2022, and higher professional fees of \$0.5 million, all as a result of an increase in engineering headcount to support our continued growth and investment in our interconnect technology and IP deployment software. We also incurred higher depreciation expense of R&D equipment of \$0.7 million.

Sales and marketing expenses

S&M expenses increased, \$5.7 million, or 49%, to \$17.4 million for the year ended December 31, 2022 from \$11.7 million for the year ended December 31, 2021. The increase in S&M expenses was primarily due to higher employee-related costs, including commissions, of \$2.9 million mainly driven by increased headcount to support growth of our business, higher stock-based compensation expense of \$1.5 million primarily related to new grants in 2022, and higher allocated costs of \$1.1 million primarily attributable to increased headcount.

General and administrative expenses

G&A expenses increased, \$3.0 million, or 23%, to \$16.4 million for the year ended December 31, 2022 from \$13.4 million for the year ended December 31, 2021. The increase in G&A expenses was primarily due to higher stock-based compensation expense of \$1.9 million primarily related to new grants in 2022. We also incurred increased directors and officers liability insurance expenses of \$1.7 million to support the normal course of operating as a public company, partially offset by decrease in professional fees of \$1.4 million.

Interest expense

	Year Ended December 31,		Change	
	2022	2021	\$	%
	(in thousands)			
Interest expense	\$ (89)	\$ (105)	\$ 16	(15)%

Interest expense for the year ended December 31, 2022 remained relatively flat compared to the year ended December 31, 2021.

Interest and other income (expense), net

	Year Ended December 31,		Change	
	2022	2021	\$	%
	(in thousands)			
Interest and other income (expense), net	\$ 1,425	\$ (474)	\$ 1,899	(401)%

Interest and other income (expense), net for the year ended December 31, 2022 was an income of \$1.4 million, compared to an expense of \$0.5 million for the year ended December 31, 2021. The increase in interest and other income is primarily related to foreign currency exchange, the gain on deconsolidation of our wholly-owned subsidiary, interest income earned on higher cash balances due to proceeds from our IPO in October 2021, and interest income earned on our available-for-sale investments.

Loss from equity method investment

	Year Ended December 31,		Change	
	2022	2021	\$	%
	(in thousands)			
Loss from equity method investment	\$ (284)	\$ —	\$ (284)	*

* Not meaningful

Loss from equity method investment was \$0.3 million for the year ended December 31, 2022, compared to zero for the year ended December 31, 2021, representing our share of Transchip's net loss during 2022 that we record on a one-quarter lag.

Provision for (benefit from) income taxes

	Year Ended December 31,		Change	
	2022	2021	\$	%
	(in thousands)			
Provision for (benefit from) income taxes	\$ (417)	\$ 1,040	\$ (1,457)	(140)%

The provision for (benefit from) income taxes for the year ended December 31, 2022 was a benefit of \$0.4 million, compared to an expense of \$1.0 million for the year ended December 31, 2021. The decrease in our income tax expense was primarily due to increases in pre-tax worldwide book losses, true-ups, changes in current year foreign withholding taxes which are creditable in foreign jurisdictions, and the release of a portion of US valuation allowance as a result of our business combination during the year ended December 31, 2022.

Liquidity and Capital Resources

Since inception, we have financed operations primarily from payments received from our customers, the net proceeds from the sale of our common stock in the IPO as well as the net proceeds from the private issuance of our convertible preferred stock and common stock. As of December 31, 2022, we had \$68.2 million in cash and cash equivalents and short-term investments of which \$4.2 million was held by our foreign subsidiaries.

We believe our cash and cash equivalents, short-term investments, and cash provided by sales of our products will be sufficient to meet our expected working capital needs, capital expenditures, financial commitments and other liquidity requirements associated with our existing operations for at least the next 12 months. If these resources are not sufficient to satisfy our liquidity requirements, we may be required to seek additional financing. If we raise additional funds by issuing equity securities, our stockholders will experience dilution. Debt financing, if available, may contain covenants that significantly restrict our operations or our ability to obtain additional debt financing in the future. Any additional financing that we raise may contain terms that are not favorable to us or our stockholders. We cannot assure you that we would be able to obtain additional financing on terms favorable to us or our existing stockholders, or at all. See "Risk Factors —Risks Related to Our Business and Industry—Our ability to raise capital in the future may be limited and could prevent us from executing our growth strategy" for additional information.

Cash Flows

The following table summarizes changes in our cash flows for the periods indicated:

	Year Ended December 31,	
	2022	2021
	(in thousands)	
Net cash used in operating activities	\$ (6,767)	\$ (814)
Net cash used in investing activities	\$ (37,481)	\$ (1,359)
Net cash (used in) provided by financing activities	\$ (4,154)	\$ 76,254

Operating Activities

Cash flows from operating activities may vary significantly from period to period depending on a variety of factors including the timing of our receipts and payments. Our ongoing cash outflows from operating activities primarily relate to payroll-related costs, payments for professional services, obligations under our property leases and design tool licenses. Our primary source of cash inflows is receipts from our accounts receivable. The timing of receipts of accounts receivable from customers is based upon the completion of agreed milestones or agreed dates as set forth in the contracts.

For the year ended December 31, 2022, net cash used in operating activities was \$6.8 million, primarily due to our net loss of \$27.4 million, adjusted for non-cash charges of \$13.0 million and \$7.6 million changes in operating assets and liabilities. Non-cash charges primarily consisted of stock-based compensation of \$11.7 million and depreciation and amortization of \$2.1 million, partially offset by deferred income taxes due to release of a portion of US valuation allowance as a result of our business combination of \$0.5 million, and amortization of deferred income of \$0.4 million. The primary drivers of the changes in operating assets and liabilities were a \$7.1 million decrease in accounts receivable, a \$0.2 million decrease in prepaid expenses and other assets, a \$0.5 million increase in accrued expenses and other liabilities, and a \$0.8 million increase in deferred revenue, offset by a \$1.0 million decrease in accounts payable.

For the year ended December 31, 2021, net cash used in operating activities was \$0.8 million, primarily due to our net loss of \$23.4 million, adjusted for non-cash charges of \$7.1 million and \$15.5 million changes in operating assets and liabilities. Non-cash charges primarily consisted of stock-based compensation of \$5.5 million and depreciation and amortization of \$1.5 million. The primary drivers of the changes in operating assets and liabilities were a \$16.3 million increase in deferred revenue, \$2.8 million increase in accrued expenses and other liabilities, \$0.5 million decrease in accounts receivables and \$0.4 million increase in accounts payable, partially offset by \$4.4 million increase in prepaid expenses and other assets.

Investing Activities

Net cash used in investing activities for the year ended December 31, 2022 was \$37.5 million primarily attributable to \$35.0 million of purchases of available-for-sale securities, \$1.1 million of payments for business combination, net of \$0.3 million of cash acquired, purchases of property and equipment of \$1.1 million, and \$0.5 million of payments related to investment in our equity method investee, see Note 15 to our consolidated financial statements. The cash outflow was offset by proceeds of \$0.2 million from principal portion of our related party loan,

Net cash used in investing activities was \$1.4 million for the year ended December 31, 2021, primarily attributable to purchases of property and equipment and payments of deferred consideration related to the Magillem acquisition.

Financing Activities

For the year ended December 31, 2022, net cash used in financing activities was \$4.2 million, primarily attributable to payments to tax authorities for shares withheld from employees of \$2.1 million, payments of contingent consideration for business combination of \$1.6 million, principal payments under vendor financing arrangements of \$1.1 million, partially offset by proceeds from exercise of stock options of \$0.9 million.

For the year ended December 31, 2021, net cash provided by financing activities was \$76.3 million, primarily attributable to proceeds from issuance of common stock upon initial public offering net of underwriting commissions and other issuance costs of \$71.3 million and proceeds from issuance of common stock of \$5.4 million.

Contractual Obligations

Our principal commitments consist of obligations under our operating leases for office space and data center hosting space and vendor finance arrangements. Information regarding our non-cancelable lease commitments as of December 31, 2022 can be found in [Note 10](#) to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Our obligations as of December 31, 2022 under our vendor finance arrangements are described in [Note 11](#) to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Critical Accounting Estimates

Our consolidated financial statements are prepared in accordance with GAAP. The preparation of consolidated financial statements requires us to make certain estimates, judgments, and assumptions. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable based upon information available to us at the time that these estimates, judgments, and assumptions are made. Our estimates and related judgments and assumptions are continually evaluated based on available information and experiences. However, actual amounts could differ from those estimates.

The following are the critical accounting policies requiring estimates, judgments, and assumptions that we believe have the most significant impact on our consolidated financial statements.

Revenue Recognition

We recognize license revenues as we transfer control of deliverables (software and services) to our customers in an amount reflecting the consideration to which we expect to be entitled. To recognize revenues, we apply the following five step approach: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenue when a performance obligation is satisfied. We account for a contract when it has approval and commitment from all parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. We apply judgment in determining the customer's ability and intention to pay based on a variety of factors including the customer's historical payment experience.

Nature of Products and Services

Our revenue is derived from licensing intellectual property, licensing software, support and maintenance services, professional services, training services, and royalties.

Design Solutions

Interconnect solutions product agreements provide customers the right to software licenses, services, software updates and technical support. We enter into licensing agreements with customers that typically range from two to three years and generally consist of delivery of a design license that grants the customer the right to use our IP to design a contractually defined number of products and stand-ready support services that provide the customer a significant benefit from our RTL as well as ongoing access to application engineer support services to perform certain verifications including benchmark performance, simulations and ultimately, through the RTL, instantiate designs into silicon over the design term.

The support services, including access to application engineering support services and the benefits of the RTL, are integral and fundamental to the customer's ability to derive its intended benefit from the IP.

CAEs are part of the product development team providing detailed requirements for engineering projects, working very closely with a customer's chief technology officer, and similar staff, and their marketing department, and performing quality assurance testing of customer products prior to shipment to their customers.

FAEs provide assistance to the customer's engineering team in translating their desired SoC architecture into inputs for NoC IP configuration, assistance in optimizing the NoC configuration, answer to customer questions by the online support system or phone, constructive reviews of the progress achieved by the customer's development team and provision of advice on how to best use the licensed IP, performance of design reviews before customer project RTL freeze and tape-out to ensure the customer used the licensed IP configuration tooling as intended so that the RTL output meets customer requirements and expectations. FAE reviews of the customer's design are mandatory and consist of an understanding of the customer requirements and analysis of the adequacy of the contemplated IP considering the customer's desired architecture and design goals and objectives, taking into consideration bandwidth, coherence/non-coherence, latency, clock and timing, areas, and any and all constraints, as identified and specific to the design under review.

Besides application engineer support services, support and maintenance services also consist of a stand-ready obligation to provide technical support and software updates over the support term. Generally, the first-year of technical support and software updates are bundled with and into the license fee with a customer option to renew additional years of support throughout the license term. However, we continue to provide technical support and software updates throughout the license term even if the customer does not renew these services in subsequent years, making the license term and support and maintenance term co-terminus.

Considering the nature of the combined design tool and assisting our customers in applying our IP technology in our customers' development environment and the relative significance thereof, we have concluded that our Interconnect Solutions IP licensing agreements are not distinct from its obligation to provide the application engineering support services and benefits of the RTL. The Interconnect Solutions IP, RTL, and the application engineering support services serve to fulfill our commitment to the customer, as they represent inputs to a single, combined performance obligation that commences upon the later of the agreement effective date or transfer of the software license. The design license and the regular two-way interaction between the design tool, RTL, and the application engineering support services give the customer the intended benefit from the arrangement, which is the ability to commercialize their design. Customers cannot benefit from the design license on its own or together with other readily available resources as no other RTL or application engineer support service exists in the marketplace that a customer could use with the design license. Consequently, the RTL and application engineer support service cannot be used on its own or together with any other design license as we do not allow the use of the RTL or provide application engineer support services separately from the design license. Further, although technical support and software updates is a distinct performance obligation, it is accounted for as if it were part of a single performance obligation that includes the licenses, RTL and application engineer support services because the technical support and updates are provided in practice for the same period of time and have the same time-based pattern of transfer to the customer as the combined design license, RTL, and application support services.

Revenues that are derived from the sale of a licensee's products that incorporate our IP are classified as royalty revenues. Royalty revenues are recognized during the quarter in which the sale of the product incorporating our IP occurs. Royalties are calculated either as a percentage of the revenues received by a licensee's sale of products incorporating our IP or on a per unit basis, as specified in the agreements with the licensees. For a majority of our royalty revenues, we receive the actual sales data from its customers after the quarter ends and account for it as unbilled receivables. When we do not receive actual sales data from the customer prior to the finalization of our financial statements, royalty revenues are recognized based on our estimation of the customer's sales during the quarter.

Deployment Solutions

Deployment Solutions product agreements provide customers the right to software licenses, software updates and technical support. The software licenses are time-based licenses with terms generally ranging from one to three years. These agreements generally have two distinct performance obligations that consist of transferring the licensed software and the support and maintenance service. Support and maintenance services consist of a stand-ready obligation to provide technical support and software updates over the support term. Revenue allocated to the software license is recognized at a point in time upon the later of the delivery date or the beginning of the license period, and revenue allocated to support services is recognized ratably over the support term.

A limited number of Deployment Solutions contracts include tokens, a mechanism used to both enable "peak" users to choose a combination of the software products on a monthly basis and restrict the number of users. We recognize revenue related to these tokens at a point in time, based on quarterly consumption information provided by the customer.

Professional Services

Our agreements often include service elements (other than maintenance and support services). These services include training, design assistance, and consulting. Services performed on a time and materials basis are recognized over the period the services are provided either using an output method such as labor hours, or a method that is otherwise consistent with the way in which value is delivered to the customer. Services performed on a fixed price basis are recognized over time, generally using costs incurred or hours expended to measure progress.

Multiple Performance Obligations

Most of our contracts with customers contain multiple performance obligations. For these contracts, we account for individual performance obligations separately, if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis, which are estimated considering multiple factors including observable industry pricing practices and internal pricing strategies and objectives. Standalone selling prices of software licenses are typically estimated using the residual approach. Standalone selling prices of professional services are typically estimated based on observable transactions when these services are sold on a standalone basis.

Transaction price

Revenue is recognized when, or as, control of a promised product or service transfers to a client, in an amount that reflects the consideration to which we expect to be entitled in exchange for transferring those products or services. If the consideration promised in a contract includes a variable amount, we estimate the amount to which we expect to be entitled using either the expected value or most likely amount method, to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur. Generally, the transaction price of our contracts is fixed at the inception of the contract. Our contracts generally do not include terms that could cause variability in the transaction price.

We assess the timing of the transfer of goods or services to the customer as compared to the timing of payments to determine whether a significant financing component exists. As a practical expedient, we do not assess the existence of a significant financing component when the difference between payment and transfer of deliverables is a year or less. If the difference in timing arises for reasons other than the provision of finance to either the customer or us, no financing component is deemed to exist. When contracts involve a significant financing component, we adjust the promised amount of consideration for the effects of the time value of money if the timing of payments agreed to by the parties to the contract (either explicitly or implicitly) provide the customer with a significant benefit of financing.

We report revenue net of any revenue-based taxes assessed by governmental authorities that are imposed on and concurrent with specific revenue-producing transactions.

In instances where foreign licensees withhold and remit taxes to local authorities in accordance with local laws and regulations, we recognize and present revenue on a gross basis, and include the withholding tax in income tax expense.

Flexible Spending Accounts

Some customers enter into a non-cancelable Flexible Spending Account (FSA) agreements whereby the customer commits to a fixed dollar amount over a specified period of time that can be used to purchase from a list of our products or services. These agreements do not meet the definition of a revenue contract until the customer executes a separate order to identify the required products and services that they are purchasing. The combination of the FSA agreement and the subsequent order creates enforceable rights and obligations, thus meeting the definition of a revenue contract. Each separate order under the agreement is treated as an individual contract and accounted for based on the respective performance obligations included within the FSA agreements.

Contract modifications

Our contracts may be modified to add, remove or change existing performance obligations. The accounting for modifications to our contracts involves assessing whether the products and services added to an existing contract are distinct and whether the pricing is at the standalone selling price. Products and services added that are not distinct are accounted for on a cumulative catch-up basis, while those that are distinct are accounted for prospectively, either as a separate contract if the additional services are priced at the standalone selling price, or as a termination of the existing contract and creation of a new contract if not priced at the standalone selling price. Our more significant contract modifications include extensions of the design license term and the purchase of additional years of support and maintenance.

Judgments

Our contracts with customers often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together requires significant judgment. Judgment is also required to determine the standalone selling price for each distinct performance obligation.

Contract Balances

The timing of revenue recognition may differ from the timing of invoicing to customers, and these timing differences result in receivables (billed or unbilled), contract assets, or contract liabilities (deferred revenue) on our consolidated balance sheet. We record a contract asset when revenue is recognized prior to the right to invoice. We record deferred revenue when we invoice customers and revenue is not yet recognized. For time-based software agreements, customers are generally invoiced in single or annual amounts, although some customers are invoiced more frequently over-time. We record an unbilled receivable when revenue is recognized and it has an unconditional right to invoice and receive payment.

We capitalize sales commission as costs of obtaining a contract when they are incremental and, if they are expected to be recovered, amortized in a manner consistent with the pattern of transfer of the good or service to which the asset relates.

Income Taxes

We account for income taxes under the asset and liability method. Under this method, deferred taxes are determined based on the temporary differences between the financial statement and tax basis of assets and liabilities using tax rates expected to be in effect during the years in which the basis differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date. We provide for a valuation allowance when it is more likely than not that some portion, or all of our deferred tax assets will not be realized. In making such determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. As of December 31, 2022 and 2021, we recorded a full valuation allowance against our U.S. federal, state, and certain foreign jurisdiction deferred tax assets.

Stock-based Compensation

We measure equity classified stock-based awards, including stock options, RSUs, and RSAs granted to employees, directors, and non-employees based on the estimated fair values of the awards on the date of the grant. Stock-based compensation expense for awards with service-based vesting only is recognized on a straight-line basis over the requisite service period which is generally the vesting period of such awards, as a component of operating expenses within the Consolidated Statements of Income (Loss). For awards that include performance conditions stock-based compensation expense is recognized on a graded vesting basis over the requisite service period. Compensation expense is not recognized until the performance condition becomes probable.

The performance-based vesting condition of certain awards is satisfied in connection with us becoming a publicly listed company or a change in control. Upon the effectiveness of our initial public offering (IPO), the performance-based vesting condition was satisfied and therefore, we recognized cumulative stock-based compensation expense of \$3.5 million associated with such RSUs for the portion for which the service-based vesting condition had been fully or partially satisfied for the year ended December 31, 2021. RSUs granted after our IPO do not contain the performance-based vesting condition described above.

We account for forfeitures related to these awards as they occur.

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option-pricing model. This valuation model for stock-based compensation expense requires us to make assumptions and judgments about the variables used in the calculation including the expected term, the volatility of our common stock, and an assumed risk-free interest rate. As a result, if we revise our assumptions and estimates, our stock-based compensation expense could change. We determine valuation assumptions for Black-Scholes as follows:

Risk-Free Interest Rate—We base the risk-free interest rate used in the Black-Scholes option-pricing model on the implied yield available on US Treasury zero coupon issues with an equivalent expected term of the options for each option group.

Expected Term—The expected term represents the period that our stock-based awards are expected to be outstanding. The expected term assumption is based on the simplified method. We expect to continue using the simplified method until sufficient information about our historical behavior is available.

Volatility—We determine the price volatility factor based on the historical volatilities of our peer group as the we do not have sufficient trading history for its common stock.

Dividend Yield—We have never declared or paid any cash dividend and does not currently plan to pay a cash dividend in the foreseeable future. Consequently, we used an expected dividend yield of zero.

We had no stock option grants during the years ended December 31, 2022 and 2021.

The fair value of RSUs and RSAs granted is measured as the fair value per share of our common stock on the date of grant.

Common Stock Valuations

Prior to our IPO, the fair value of the common stock underlying our stock-based awards has historically been determined by our board of directors, with input from management and contemporaneous independent third-party valuations. We believe that our board of directors has the relevant experience and expertise to determine the fair value of our common stock. Given the absence of a public trading market of our common stock, and in accordance with the American Institute of Certified Public Accountants Practice Aid, Valuation of Privately-Held Company Equity Securities Issued as Compensation, our board of directors exercised reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of the fair value of our common stock, including:

- independent third-party valuations of our common stock;
- the rights, preferences and privileges of our redeemable convertible preferred stock relative to those of our common stock;
- our financial condition, results of operations and capital resources;
- the industry outlook;
- the valuation of comparable companies;
- the lack of marketability of our common stock;
- the fact that option and RSU grants have involved rights in illiquid securities in a private company;
- the likelihood and timeline of achieving a liquidity event, such as a public offering or a sale of our company given prevailing market conditions;
- the history and nature of our business, industry trends and competitive environment; and
- general economic outlook including economic growth, inflation and unemployment, interest rate environment and global economic trends.

After our IPO, the fair value of our common stock is based on the closing price as reported on the date of grant on the primary stock exchange on which our common stock is traded.

Business Combinations

We allocate the purchase price to the tangible assets acquired, liabilities assumed, and intangible assets acquired based on their estimated fair values. The excess of the purchase price over the fair values of these identifiable assets and liabilities is recorded as goodwill. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. These estimates are based on information obtained from management of the acquired companies, our assessment of this information, and historical experience. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from acquired customers, acquired technology, and trade names from a market participant perspective, useful lives, and discount rates. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates. In addition, unanticipated events and circumstances may occur that may affect the accuracy or validity of such estimates, and if such events occur, we may be required to adjust the value allocated to acquired assets or assumed liabilities. During the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our consolidated statements of loss. Acquisition costs, such as legal and consulting fees, are expensed as incurred.

Investments

All investments in debt securities have been classified as "available-for-sale" and are carried at estimated fair value as determined based upon quoted market prices or pricing models for similar securities. We determine the appropriate classification of our investments in debt securities at the time of purchase and reevaluate such designation as of each balance sheet date. Short-term investments have original maturities of greater than three months but one year or less as of the consolidated balance sheet dates. Long-term investments have maturities greater than one year as of the consolidated balance sheet dates. If we expect to sell a debt security within one year, we will classify the investment as a short-term investment regardless of its stated maturity date.

The available-for-sale securities are reported at fair value with unrealized gains and losses included in accumulated other comprehensive income (loss). A decline in the fair value of the available-for-sale securities is recognized directly to net income (loss) if judged to be other than temporary. Interest earned on investments in debt securities, realized gains and losses and impairment losses, if any, on investments in debt securities are included in interest and other income (expense), net in the consolidated statements of loss. The cost of securities sold is based on the specific-identification method.

Equity Method Investments

We use the equity method to account for our investments in companies which we do not control but are deemed to have the ability to exercise significant influence over operating and financial decisions of the investee.

We generally measure an investment in the common stock of an investee initially at cost. The carrying value of the our equity method investments is reported in equity method investment on the consolidated balance sheets. We record our proportionate share of the income or loss in our equity method investments on a one-quarter lag. The cost is adjusted to recognize our proportionate share of the investee's net income or loss after the date of investment. We assess investments for impairment whenever events or changes in circumstances indicate that the carrying value of an investment may not be recoverable.

Distributions received from an investee reduce the carrying value of an investment and are recorded in the consolidated statements of cash flows using the nature of distribution approach.

Goodwill and Intangible Assets

We perform our goodwill and other indefinite-lived intangible assets impairment tests annually or more frequently if events or changes in circumstances occur that would more likely than not reduce the fair value below its carrying value. For the years ended December 31, 2022 and 2021, we did not have any goodwill or other indefinite-lived intangible assets impairment.

Acquired finite-lived intangible assets are amortized on a straight-line basis over the estimated useful lives of the assets, which range from five to eight years, unless the lives are determined to be indefinite. We routinely review the remaining estimated useful lives of finite-lived intangible assets. Amortization expenses are recorded operating expenses on the consolidated statements of loss.

Recently Issued and Adopted Accounting Pronouncements

For more information regarding recently issued accounting pronouncements, see [Note 2](#) to our consolidated financial statements included elsewhere in this report.

JOBS Act

We are an emerging growth company, as defined in the Jumpstart Our Business Startups (JOBS) Act. The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period under the JOBS Act for the adoption of certain accounting standards until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. See [Note 2](#), Basis of Presentation and Summary of Significant Accounting Policies, in the notes to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial condition due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in interest rates and foreign currency exchange rates.

Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial condition due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in interest rates and foreign currency exchange rates.

Foreign Currency Exchange Risk

Operating in international markets involves exposure to possible volatile movements in currency exchange rates. A majority of our revenue and expenses are transacted in U.S. dollars and our assets and liabilities together with our cash holdings are predominately denominated in U.S. dollars reducing the exposure to currency fluctuations.

If the volume of our international operations increases and foreign currency exchange rates change, the impact to our consolidated statements of operations could be significant and may affect the comparability of operating results. The impact from foreign currency remeasurement during the year ended December 31, 2022 and 2021 was approximately \$0.1 million and \$0.6 million, respectively. We do not believe a 10% increase or decrease in foreign exchange rates would have resulted in a material impact to our operating results.

Item 8. Financial Statements and Supplementary Data

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	<u>Page</u>
Arteris, Inc.	
Report of Independent Registered Public Accounting Firm (Moss Adams LLP, San Francisco, CA, PCAOB ID: 659)	79
Consolidated Balance Sheets	80
Consolidated Statements of Loss	81
Consolidated Statements of Comprehensive Loss	82
Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)	83
Consolidated Statements of Cash Flows	84
Notes to Consolidated Financial Statements	85

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of
Arteris, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Arteris, Inc. and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of loss, comprehensive loss, redeemable convertible preferred stock and stockholders' equity (deficit), and cash flows for the years then ended, and the related notes (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, 2022 and 2021, and the consolidated results of its operations and its cash flows for the years then ended, 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.

/s/ Moss Adams LLP

San Francisco, California
February 28, 2023

We have served as the Company's auditor since 2020.

Arteris, Inc.
Consolidated Balance Sheets
(In thousands, except share and per share data)

	As of December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 37,423	\$ 85,825
Short-term investments	30,728	—
Accounts receivable, net	7,143	13,873
Prepaid expenses and other current assets	5,818	6,949
Total current assets	81,112	106,647
Property and equipment, net	3,617	2,438
Long-term investments	4,427	—
Equity method investment	11,897	—
Operating lease right-of-use assets	1,883	2,765
Intangibles, net	4,575	2,959
Goodwill	4,218	2,677
Other assets	3,787	2,957
TOTAL ASSETS	\$ 115,516	\$ 120,443
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 572	\$ 1,722
Accrued expenses and other current liabilities	12,095	10,573
Operating lease liabilities, current	899	961
Deferred revenue, current	28,839	28,403
Vendor financing arrangements, current	1,264	833
Total current liabilities	43,669	42,492
Deferred revenue, noncurrent	21,840	20,773
Operating lease liabilities, noncurrent	1,009	1,851
Vendor financing arrangements, noncurrent	448	266
Deferred income, noncurrent	9,993	—
Other liabilities	1,022	2,157
Total liabilities	77,981	67,539
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Preferred stock, par value of \$0.001—10,000,000 shares authorized and no shares issued and outstanding as of December 31, 2022 and 2021	—	—
Common stock, par value of \$0.001—300,000,000 shares authorized at December 31, 2022 and 2021; 34,625,875 and 31,530,682 shares issued and outstanding at December 31, 2022 and December 31, 2021, respectively	34	31
Additional paid-in capital	103,778	91,945
Accumulated other comprehensive gain (loss)	101	(81)
Accumulated deficit	(66,378)	(38,991)
Total stockholders' equity	37,535	52,904
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 115,516	\$ 120,443

See notes to consolidated financial statements

Arteris, Inc.
Consolidated Statements of Loss
(In thousands, except share and per share data)

	Year ended December 31,	
	2022	2021
Revenue		
Licensing, support and maintenance	\$ 46,012	\$ 34,731
Variable royalties and other	4,366	3,133
Total revenue	50,378	37,864
Cost of revenue	4,281	3,731
Gross profit	46,097	34,133
Operating expenses:		
Research and development	41,167	30,812
Sales and marketing	17,419	11,726
General and administrative	16,367	13,360
Total operating expenses	74,953	55,898
Loss from operations	(28,856)	(21,765)
Interest expense	(89)	(105)
Interest and other income (expense), net	1,425	(474)
Loss before income taxes and loss from equity method investment	(27,520)	(22,344)
Loss from equity method investment, net of tax	(284)	—
Provision for (benefit from) income taxes	(417)	1,040
Net loss	\$ (27,387)	\$ (23,384)
Net loss per share attributable to common stockholders, basic and diluted	\$ (0.84)	\$ (1.06)
Weighted average shares used in computing per share amounts, basic and diluted	32,578,776	21,972,101

See notes to consolidated financial statements.

Arteris, Inc.
Consolidated Statements of Comprehensive Loss
(In thousands)

	Year ended December 31,	
	2022	2021
Net loss	\$ (27,387)	\$ (23,384)
Other comprehensive loss		
Unrealized loss on available-for-sale securities, net of tax	(53)	—
Unrealized pension actuarial gain (loss)	235	(50)
Comprehensive loss	<u>\$ (27,205)</u>	<u>\$ (23,434)</u>

See notes to consolidated financial statements.

Arteris, Inc.
Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)
(In thousands, except share data)

	Redeemable Convertible Preferred Stock		Stockholders' Equity (Deficit)						
	Shares	Amount	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Gain (Loss)	Accumulated Deficit	Total	
			Shares	Amount					
BALANCE—December 31, 2020	4,471,316	\$ 5,712	18,486,989	\$ 18	\$ 3,612	\$ (31)	\$ (15,607)	\$ (12,008)	
Issuance of common stock	—	—	1,250,000	2	5,435	—	—	5,437	
Conversion of redeemable convertible preferred stock to common stock upon initial public offering	(4,471,316)	(5,712)	4,471,316	4	5,708	—	—	5,712	
Issuance of common stock upon initial public offering, net of underwriting commissions and other issuance costs	—	—	5,750,000	6	71,082	—	—	71,088	
Issuance of common stock for cash upon exercise of stock options	—	—	1,362,327	1	598	—	—	599	
Issuance of common stock for settlement of restricted stock units	—	—	210,050	—	—	—	—	—	
Stock-based compensation expense	—	—	—	—	5,510	—	—	5,510	
Unrealized pension actuarial loss	—	—	—	—	—	(50)	—	(50)	
Net loss	—	—	—	—	—	—	(23,384)	(23,384)	
BALANCE—December 31, 2021	—	—	31,530,682	31	91,945	(81)	(38,991)	52,904	
Issuance of common stock for cash upon exercise of stock options	—	—	1,451,784	2	874	—	—	876	
Issuance of common stock for settlement of restricted stock units	—	—	1,223,312	1	(1)	—	—	—	
Issuance of common stock in connection with business combination	—	—	331,569	—	1,333	—	—	1,333	
Issuance of restricted common stock in connection with business combination	—	—	331,574	—	—	—	—	—	
Tax withholding on RSUs settlement	—	—	(243,046)	—	(2,065)	—	—	(2,065)	
Stock-based compensation expense	—	—	—	—	11,692	—	—	11,692	
Unrealized loss on available-for-sale securities, net of tax	—	—	—	—	—	(53)	—	(53)	
Unrealized pension actuarial gain	—	—	—	—	—	235	—	235	
Net loss	—	—	—	—	—	—	(27,387)	(27,387)	
BALANCE—December 31, 2022	—	\$ —	34,625,875	\$ 34	\$ 103,778	103,778	\$ 101	\$ (66,378)	\$ 37,535

See notes to consolidated financial statements

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

	Year ended December 31,	
	2022	2021
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	\$ (27,387)	\$ (23,384)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	2,099	1,492
Stock-based compensation	11,692	5,510
Pension plan expenses	136	109
Operating non-cash lease expense	(21)	(45)
Amortization of deferred income	(391)	—
Gain on deconsolidation of subsidiary	(149)	—
Loss from equity method investment	284	—
Net accretion of discounts on available-for-sale securities	(177)	—
Deferred income taxes	(484)	—
Other, net	14	(9)
Changes in operating assets and liabilities:		
Accounts receivable, net	7,102	477
Prepaid expenses and other assets	202	(4,418)
Accounts payable	(1,034)	350
Accrued expenses and other liabilities	517	2,836
Deferred revenue	830	16,268
Net cash used in operating activities	(6,767)	(814)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of property and equipment	(1,051)	(808)
Payments relating to investment in equity method investment	(519)	—
Purchases of available-for-sale securities	(35,031)	—
Proceeds from principal portion of related party loan	241	—
Payments for business combination, net of cash acquired	(1,121)	—
Payments of deferred consideration for business combination	—	(500)
Other	—	(51)
Net cash used in investing activities	(37,481)	(1,359)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Payments of contingent consideration for business combination	(1,573)	—
Proceeds from issuance of common stock upon initial public offering, net of underwriting commissions	—	74,865
Proceeds from issuance of common stock	—	5,435
Payments to tax authorities for shares withheld from employees	(2,065)	—
Payments of principal portion of term loan	—	(550)
Principal payments under vendor financing arrangements	(1,136)	(574)
Proceeds from exercise of stock options	876	599
Payments of deferred offering costs	(256)	(3,521)
Net cash (used in) provided by financing activities	(4,154)	76,254
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(48,402)	74,081
CASH AND CASH EQUIVALENTS, beginning of period	85,825	11,744
CASH AND CASH EQUIVALENTS, end of period	\$ 37,423	\$ 85,825
Supplemental cash flow information:		
Cash paid for interest	\$ —	\$ 19
Cash paid for taxes	\$ 790	\$ 489
Noncash activities:		
Equity obtained in equity method investment in exchange for contribution of license agreement (Note 15)	\$ 11,563	\$ —
Purchase of property and equipment through vendor financing and accrued expenses and other current liabilities	\$ 2,088	\$ 1,099
Issuance of common stock for business combination	\$ 1,333	\$ —
Contingent consideration for business combination	\$ 362	\$ —
Operating lease right-of-use assets exchanged for lease liabilities	\$ 63	\$ —
Unpaid deferred offering costs	\$ —	\$ 256
Conversion of redeemable convertible preferred stock to common stock	\$ —	\$ 5,712
Recognition of new right-of-use assets and lease liabilities for the lease modification/obligation	\$ —	\$ 749

See notes to consolidated financial statements.

Arteris, Inc.
Notes to Consolidated Financial Statements

1. DESCRIPTION OF BUSINESS

Arteris, Inc. and its subsidiaries (collectively, the Company or Arteris) was incorporated in Delaware on April 12, 2004. The Company develops, licenses, and supports the on-chip interconnect fabric technology used in System-on-Chip (SoC) designs for a variety of devices and in the development and distribution of Network-on-Chip (NoC) interconnect intellectual property (IP). The Company also provides software and services to enable efficient deployment of NoC IP, IP support & maintenance services, professional services and training and on-site support services. The Company is headquartered in Campbell, California and has offices in the United States, France, Japan, South Korea and China.

COVID-19 Pandemic

While the duration and extent of the COVID-19 pandemic depends on future developments that cannot be accurately predicted at this time, such as the extent and effectiveness of containment actions and emergence of new variants, it has already had an adverse effect on the global economy and the lasting effects of the pandemic continue to be unknown. In response to the COVID-19 pandemic, the measures implemented by various authorities have caused us to change the Company's business practices, including those related to where employees work, the distance between employees in the Company's facilities, limitations on in-person meetings between employees and with customers, suppliers, service providers and stakeholders, as well as restrictions on business travel to domestic and international locations and to attend trade shows, technical conferences and other events.

The Company is unable to accurately predict the full impact that COVID-19 will have on its future results of operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic and containment measures. The Company will continue to monitor health orders issued by applicable governments to ensure compliance with evolving domestic and global COVID-19 guidelines.

Initial Public Offering

In October, 2021, the Company completed its initial public offering (IPO), in which it issued and sold 5,750,000 shares of its common stock at the public offering price of \$14.00 per share, including 750,000 shares of its common stock upon the full exercise of the underwriters' option to purchase additional shares. The Company received net proceeds of \$71.1 million after deducting underwriting discounts and commissions and offering expenses. In connection with the IPO, all of the shares of the Company's outstanding redeemable convertible preferred stock prior to the IPO automatically converted into an aggregate of 4,471,316 shares of common stock.

Deferred offering costs for the IPO were \$3.8 million and consisted primarily of direct incremental accounting, legal and other fees related to the IPO. Prior to the IPO, all deferred offering costs were capitalized and included in other assets, non-current on the consolidated balance sheets. Upon completion of the IPO, deferred offering costs were reclassified into stockholders' equity (deficit) as a reduction of the IPO proceeds.

2. BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP).

Principles of Consolidation

The consolidated financial statements include the accounts of Arteris, Inc. and its wholly-owned subsidiaries. All intercompany transactions and accounts have been eliminated in consolidation.

Segment Information

The Company operates as a single operating segment. The chief operating decision maker is the Company's Chief Executive Officer, who makes resource allocation decisions and assesses performance based on financial information presented on a consolidated basis, accompanied by disaggregated revenue information. Accordingly, the Company has determined that it has a single reportable segment and operating segment.

Use of Estimates

The preparation of the consolidated financial statements in conformity with GAAP requires management to make estimates, judgments and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Such estimates relate to, among others, revenue recognition, the useful lives of assets, assessment of recoverability of property, plant and equipment, fair value of investments, impairment of the equity method investment, fair values of goodwill and other intangible assets, including impairments, leases, allowances for doubtful accounts, deferred tax assets and related valuation allowance, stock-based compensation, potential reserves relating to litigation and tax matters, collectability of certain receivables, fair value and amortization of deferred income, as well as other accruals or reserves. Actual results could differ from those estimates and such differences may be material to the consolidated financial statements.

Foreign Currency

The Company and its foreign subsidiaries' functional currency is the US dollar. Accordingly, monetary assets and liabilities of foreign subsidiaries are remeasured into US dollars at the exchange rates in effect at the balance sheet date, non-monetary assets and liabilities are recorded at historical rates, and revenue and expenses are remeasured at average rates during the period. Remeasurement adjustments are recognized as a component of interest and other income (expense), net within the consolidated statements of loss.

Comprehensive Loss

Comprehensive loss generally represents all changes in stockholders' deficit during the period except those resulting from investments by, or distributions to, stockholders. For the years ended December 31, 2022 and 2021, the components of comprehensive loss consist of net loss and unrealized pension actuarial gain (loss). For the year ended December 31, 2022, comprehensive loss also consists of unrealized loss on available-for-sale securities, net of tax.

Net Loss per Share

Basic net loss per share is computed by dividing net loss available to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share is computed by dividing net loss by the weighted-average number of shares of common stock during the period, plus the dilutive effects of stock options, restricted stock units (RSU) and restricted stock awards (RSA). Dilutive shares of common stock are determined by applying the treasury stock method.

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with original maturities of three months or less from the purchase date to be cash equivalents. The Company's cash equivalents include deposits in money market accounts which were unrestricted as to withdrawal or use and are stated at fair value. As of December 31, 2022, cash and cash equivalents consisted primarily of checking, savings, money market accounts and highly liquid investments with original maturities of three months or less. As of December 31, 2021, cash consisted primarily of checking and savings deposits. Interest earned on cash and cash equivalents is included in interest and other income (expense), net in the consolidated statements of loss.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable, net consist of primarily billed and unbilled trade accounts receivable. Unbilled accounts receivable represents amounts recorded as royalty revenue which will be invoiced within a short period upon receipt of the royalty reports from the licensees. The Company records accounts receivable when it has an unconditional right to consideration. Trade accounts receivable are recorded at the invoiced amount. The Company maintains allowances for doubtful accounts to reduce its receivables to their estimated net realizable value. In general, the Company does not offer extended credit terms and also do not require any security or collateral to support its receivables. The Company performs ongoing credit evaluations of its customers and establishes allowances for potential credit losses by considering factors such as historical experience, credit quality, age of the accounts receivable balances, and current economic conditions that may affect a customer's ability to pay. The Company's allowance for doubtful accounts activity has historically not been significant. Probable losses are recorded in general and administrative expense in the consolidated statements of income (loss).

Account balances are written off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote.

Concentrations of Credit Risk

Financial instruments that potentially subject us to concentration of credit risk consist of cash and cash equivalents, investments and accounts receivable. Cash is currently held in three financial institutions and, at times, may exceed federally insured limits.

The Company's accounts receivable are derived principally from revenue earned from customers located in Americas, Europe, Middle East and Asia Pacific regions.

Accounts receivable from the Company's major customers representing 10% or more of total accounts receivable was as follows:

	As of December 31,	
	2022	2021
Customer A	32 %	33 %
Customer B	*	21 %
Customer C	*	12 %

* Customer accounted for less than 10% of total accounts receivable at period end.

Revenue from the Company's major customers representing 10% or more of total revenue was as follows:

	Year Ended December 31,	
	2022	2021
Customer A	24 %	23 %

Property and Equipment

Property and equipment are stated at cost, less accumulated depreciation. Depreciation is recorded using the straight-line method over the estimated useful lives, generally ranging from one to ten years. Leasehold improvements are amortized over the shorter of the estimated useful life of the asset or the remaining lease term.

Depreciation expenses are recorded in cost of revenue and operating expenses in the consolidated statements of loss. Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is recorded as a component of operating expenses. Repairs and maintenance costs are expensed as incurred.

The Company evaluates the recoverability of property and equipment for possible impairment whenever events or circumstances indicate that the carrying amount of such assets may not be recoverable. The evaluation is performed at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. Recoverability of these assets is measured by comparing their carrying amounts to the future undiscounted cash flows the assets are expected to generate. If such review indicates that the carrying amount is not recoverable, the carrying amount of such assets is reduced to fair value. No impairment was recognized during the years ended December 31, 2022 and 2021.

Business Combinations

The Company allocates the purchase price to the tangible assets acquired, liabilities assumed, and intangible assets acquired based on their estimated fair values. The excess of the purchase price over the fair value of these identifiable assets and liabilities is recorded as goodwill. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. These estimates are based on information obtained from management of the acquired companies, the Company's assessment of this information, and historical experience. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from acquired customers, acquired technology, and trade names from a market participant perspective, useful lives, and discount rates. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates. 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. During the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the Company's consolidated statements of income (loss). Acquisition costs, such as legal and consulting fees, are expensed as incurred.

Goodwill and Intangible Assets

The Company performs its goodwill and other indefinite-lived intangible assets impairment tests annually or more frequently if events or changes in circumstances occur that would more likely than not reduce the fair value below its carrying value. For the years ended December 31, 2022 and 2021, the Company did not have any goodwill or other indefinite-lived intangible assets impairment.

Acquired finite-lived intangible assets are amortized on a straight-line basis over the estimated useful lives of the assets, which range from five to eight years, unless the lives are determined to be indefinite. The Company routinely reviews the remaining estimated useful lives of finite-lived intangible assets. Amortization expenses are recorded in operating expenses on the consolidated statements of income (loss).

Right-of-use Assets (ROU) and Lease Liabilities

The Company recognizes leases in accordance with Accounting Standard Codification (ASC) Topic 842, Leases, and subsequently issued additional related Accounting Standard Updates (ASU) (Topic 842).

The Company leases its offices at various locations under noncancelable operating lease agreements expiring at various dates through 2027. Under the terms of these agreements, the Company also bears the costs for certain insurance, property tax, and maintenance. The terms of certain lease agreements provide for increasing rental payments at fixed intervals.

At lease commencement, the Company measures and records a lease liability equal to the present value of the remaining lease payments, generally discounted using incremental borrowing rate as the implicit rate is not readily determinable on many of its leases. When determining the incremental borrowing rates, the Company considers information including, but not limited to, the lease term, the interest rates on its collateralized debt and incremental borrowing rates for its peer group.

On the lease commencement date, the amount of the ROU assets consists of the following:

- The amount of the initial measurement of the lease liability;
- Any lease payments made at or before the commencement date, minus any lease incentives received; and
- Any initial direct costs incurred.

The Company assesses the option for lease extensions, renewals, or terminations on individual leases, and generally considers the base term to be the term of lease contracts, unless it is reasonably certain that the Company will exercise such options. Lease agreements may contain other variable costs such as common area maintenance, insurance, real estate taxes or other costs. Variable lease costs are expensed as incurred in the consolidated statements of income (loss). The Company does not include non-lease components with lease payments for the purpose of calculating lease right-of-use assets and lease liabilities. The lease agreements generally do not contain any residual guarantees or restrictive covenants.

Operating leases are included in operating lease ROU assets, operating lease liabilities, current and operating lease liabilities, noncurrent in the consolidated balance sheets. Finance leases are included in property and equipment, accrued expenses and other current liabilities and other liabilities in the consolidated balance sheets.

Revenue Recognition

The Company recognizes revenue in accordance with ASC Topic 606, *Revenue from Contracts with Customers*, and subsequently issued additional related ASUs (*Topic 606*). The Company recognizes revenues as it transfers control of deliverables (software and services) to its customers in an amount reflecting the consideration to which it expects to be entitled. To recognize revenues, the Company applies the following five step approach: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenues when a performance obligation is satisfied. The Company accounts for a contract when it has approval and commitment from all parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. The Company applies judgment in determining the customer's ability and intention to pay based on a variety of factors including the customer's historical payment experience.

Nature of Products and Services

The Company's revenue is primarily derived from licensing intellectual property, licensing software, support and maintenance services, professional services, training services, and royalties.

Design Solutions

Interconnect Solutions product arrangements provide customers the right to software licenses, services, software updates and technical support. The Company enters into licensing arrangements with customers that typically range from two to three years and generally consist of delivery of a design license that grants the customer the right to use the IP to design a contractually defined number of products and stand-ready support services that provide the customer a significant benefit from its proprietary software tool (RTL) as well as ongoing access to Corporate Application Engineers (CAE) and Field Application Engineers (FAE) (collectively, application engineer support services) to perform certain verifications including benchmark performance, simulations and ultimately, through the RTL, instantiate designs into silicon over the design term.

The support services, including access to application engineering support services and the benefits of the RTL, are integral and fundamental to the customer's ability to derive its intended benefit from the IP. CAEs are part of the product development team providing detailed requirements for engineering projects, working very closely with a customer's chief technology officer and the marketing department, and performing quality assurance testing of customer products prior to shipment to their customers. FAEs provide assistance to the customer's engineering team in translating their desired SoC architecture into inputs for NoC IP configuration, assistance in optimizing the NoC configuration, answer to customer questions by the online support system or phone, constructive reviews of the progress achieved by the customer's development team and provision of advice on how to best use the licensed IP, performance of design reviews before customer project RTL freeze and tape-out to ensure the customer used the licensed IP configuration tooling as intended so that the RTL output meets customer requirements and expectations. FAE reviews of the customer's design are mandatory and consist of an understanding of the customer requirements and analysis of the adequacy of the contemplated IP considering the customer's desired architecture and design goals and objectives, taking into consideration bandwidth, coherence/non-coherence, latency, clock and timing, areas, and any and all constraints, as identified and specific to the design under review.

Besides application engineer support services, support and maintenance services also consist of a stand-ready obligation to provide technical support and software updates over the support term. Generally, the first-year of technical support and software updates are bundled with and into the license fee with a customer option to renew additional years of support throughout the license term. However, the Company continues to provide technical support and software updates throughout the license term even if the customer does not renew these services in subsequent years, making the license term and support and maintenance term co-terminus.

Considering the nature of the combined design tool and assisting the Company's customers in applying its IP technology in its customers' development environment and the relative significance thereof, the Company has concluded that its Interconnect Solutions IP licensing arrangements are not distinct from its obligation to provide the application engineering support services and benefits of the RTL. The Interconnect Solutions IP, RTL, and the application engineering support services serve to fulfill its commitment to the customer, as they represent inputs to a single, combined performance obligation that commences upon the later of the arrangement effective date or transfer of the software license. The design license and the regular two-way interaction between the design tool, RTL, and the application engineering support services give the customer the intended benefit from the arrangement, which is the ability to commercialize their design. Customers cannot benefit from the design license on its own or together with other readily available resources as no other RTL or application engineer support service provides exists in the marketplace that a customer could use with the design license. Consequently, the RTL and application engineer support service cannot be used on its own or together with any other design license as the Company does not allow the use of the RTL or provide application engineer support services separately from the design license. Further, although technical support and software updates is a distinct performance obligation, it is accounted for as if it were part of a single performance obligation that includes the licenses, RTL and application engineer support services because the technical support and updates are provided in practice for the same period of time and have the same time-based pattern of transfer to the customer as the combined design license, RTL, and application support services.

Revenues that are derived from the sale of a licensee's products that incorporate the Company's IP are classified as royalty revenues. Royalty revenues are recognized during the quarter in which the sale of the product incorporating the Company's IP occurs. Royalties are calculated either as a percentage of the revenues received by a licensee's sale of products incorporating the Company's IP or on a per unit basis, as specified in the agreements with the licensees. For a majority of the Company's royalty revenues, it receives the actual sales data from its customers after the quarter ends and accounts for it as unbilled receivables. When the Company does not receive actual sales data from the customer prior to the finalization of its financial statements, royalty revenues are recognized based on its estimation of the customer's sales during the quarter.

Deployment Solutions

Deployment Solutions product and CSRCompiler product arrangements provide customers the right to software licenses, software updates and technical support. The software licenses are time-based licenses with terms generally ranging from one to three years. These arrangements generally have two distinct performance obligations that consist of transferring the licensed software and the support and maintenance service. Support and maintenance services consist of a stand-ready obligation to provide technical support and software updates over the support term. Revenue allocated to the software license is recognized at a point in time upon the later of the delivery date or the beginning of the license period, and revenue allocated to support services is recognized ratably over the support term.

A limited number of Deployment Solutions contracts include tokens, a mechanism used to both enable "peak" users to choose a combination of the software products on a monthly basis and restrict the number of users. The Company recognizes revenue related to these tokens at a point in time, upon delivery of monthly token license keys to the customer.

Professional Services

The Company's agreements often include service elements (other than maintenance and support services). These services include training, design assistance, and consulting. Services performed on a time and materials basis are recognized over the period the services are provided either using an output method such as labor hours, or a method that is otherwise consistent with the way in which value is delivered to the customer. Services performed on a fixed price basis are recognized over time, generally using costs incurred or hours expended to measure progress.

Multiple Performance Obligations

Most of the Company's contracts with customers contain multiple performance obligations. For these contracts, the Company accounts for individual performance obligations separately, if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis, which are estimated considering multiple factors including observable industry pricing practices and internal pricing strategies and objectives. Standalone selling prices of software license are typically estimated using the residual approach. Standalone selling prices of professional services are typically estimated based on observable transactions when these services are sold on a standalone basis.

Transaction price

Revenue is recognized when, or as, control of a promised product or service transfers to a client, in an amount that reflects the consideration to which the Company expects to be entitled in exchange for transferring those products or services. If the consideration promised in a contract includes a variable amount, the Company estimates the amount to which it expects to be entitled using either the expected value or most likely amount method, to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur. Generally, the transaction price of the Company's contracts is fixed at the inception of the contract, except for variable royalties. The Company's contracts generally do not include terms that could cause variability in the transaction price.

The Company assesses the timing of the transfer of goods or services to the customer as compared to the timing of payments to determine whether a significant financing component exists. As a practical expedient, the Company does not assess the existence of a significant financing component when the difference between payment and transfer of deliverables is a year or less. If the difference in timing arises for reasons other than the provision of finance to either the customer or the Company, no financing component is deemed to exist. When contracts involve a significant financing component, the Company adjusts the promised amount of consideration for the effects of the time value of money if the timing of payments agreed to by the parties to the contract (either explicitly or implicitly) provide the customer with a significant benefit of financing.

The Company reports revenue net of any revenue-based taxes assessed by governmental authorities that are imposed on and concurrent with specific revenue-producing transactions.

In instances where foreign licensees withhold and remit taxes to local authorities in accordance with local laws and regulations, the Company recognizes and presents revenue on a gross basis, and includes the withholding tax in income tax expense.

Flexible Spending Accounts

Some customers enter into a non-cancelable flexible spending account agreements (FSA Agreements) whereby the customer commits to a fixed dollar amount over a specified period of time that can be used to purchase from a list of the Company's products or services. These agreements do not meet the definition of a revenue contract until the customer executes a separate order to identify the required products and services that they are purchasing. The combination of the FSA agreement and the subsequent order creates enforceable rights and obligations, thus meeting the definition of a revenue contract. Each separate order under the agreement is treated as an individual contract and accounted for based on the respective performance obligations included within the FSA agreements.

Contract modifications

The Company's contracts may be modified to add, remove or change existing performance obligations. The accounting for modifications to the Company's contracts involves assessing whether the products and services added to an existing contract are distinct and whether the pricing is at the standalone selling price. Products and services added that are not distinct are accounted for on a cumulative catch-up basis, while those that are distinct are accounted for prospectively, either as a separate contract if the additional services are priced at the standalone selling price, or as a termination of the existing contract and creation of a new contract if not priced at the standalone selling price. The Company's more significant contract modifications include extensions of the design license term and the purchase of additional years of support and maintenance.

Judgments

The Company's contracts with customers often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together requires significant judgment. Judgment is also required to determine the standalone selling price for each distinct performance obligation.

Contract Balances

The timing of revenue recognition may differ from the timing of invoicing to customers, and these timing differences result in receivables (billed or unbilled), contract assets, or contract liabilities (deferred revenue) on the Company's consolidated balance sheets. The Company records a contract asset when revenue is recognized prior to the right to invoice. The Company records deferred revenue when it invoices customers and revenue is not yet recognized. For time-based software agreements, customers are generally invoiced in single or annual amounts, although some customers are invoiced more frequently over time. The Company records an unbilled receivable when revenue is recognized and it has an unconditional right to invoice and receive payment.

The Company capitalizes sales commission as costs of obtaining a contract when they are incremental and, if they are expected to be recovered, amortized in a manner consistent with the pattern of transfer of the good or service to which the asset relates.

Cost of Revenue

Cost of Revenues relates to costs associated with the Company's IP licensing arrangements, deployment solution software and support activities, including applicable personnel related costs, travel, and overhead.

Research and Development

Research and development costs that do not meet the criteria for capitalization are expensed as incurred. Research and development costs consist primarily of compensation, stock-based compensation, and employee benefits of engineering and product development personnel, consulting services, and other direct expenses.

Software Development Costs

Software development costs are capitalized beginning when a product's technological feasibility has been established and ending when a product is available for general release to customers. Arteris has not capitalized any software development costs as of and for the years ended December 31, 2022 and 2021 as the period between establishing technological feasibility and general customer release has historically been short and therefore capitalizable costs have been insignificant.

The Company has not capitalized any internal-use software development costs as these costs have historically been insignificant.

Sales and Marketing

Sales and marketing expenses consist of compensation and employee benefits of marketing and sales personnel and related support teams, and stock-based compensation, as well as travel, trade show sponsorships and events, conferences, and internet advertising costs. Advertising costs, included in sales and marketing expenses, are expensed as incurred. The Company incurred advertising costs of \$0.1 million and \$0.4 million for the years ended December 31, 2022 and 2021, respectively.

General and Administrative

General and administrative expenses include executive and administrative compensation and employee benefits, depreciation, professional services fees, insurance costs, bad debt, other allocated costs, such as facility-related expenses, supplies, other fixed costs, and stock-based compensation.

Stock-based Compensation

The Company measures equity classified stock-based awards, including stock options, RSUs, and RSAs granted to employees, directors, and non-employees based on the estimated fair values of the awards on the date of the grant. Stock-based compensation expense for awards with service-based vesting only is recognized on a straight-line basis over the requisite service period which is generally the vesting period of such awards, as a component of operating expenses within the consolidated statements of income (loss). For awards that include performance conditions stock-based compensation expense is recognized on a graded vesting basis over the requisite service period. Compensation expense is not recognized until the performance condition becomes probable. The Company accounts for forfeitures related to these awards as they occur.

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option-pricing model. This valuation model for stock-based compensation expense requires the Company to make assumptions and judgments about the variables used in the calculation including the expected term, the volatility of the Company's common stock, and an assumed risk-free interest rate. As a result, if the Company revises its assumptions and estimates, the Company's stock-based compensation expense could change.

The fair value of RSUs and RSAs granted is measured as the fair value per share of the Company's common stock on the date of grant.

Income Taxes

The Company accounts for income taxes under the asset and liability method. Under this method, deferred taxes are determined based on the temporary differences between the financial statement and tax basis of assets and liabilities using tax rates expected to be in effect during the years in which the basis differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date. The Company provides for a valuation allowance when it is more likely than not that some portion, or all of its deferred tax assets will not be realized. In making such determination, the Company considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. As of December 31, 2022 and 2021, the Company recorded a full valuation allowance against its U.S. federal, state, and certain foreign jurisdiction net deferred tax assets.

ASC 740 prescribes a recognition threshold and a measurement attribute for the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. For those benefits to be recognized, a tax position must be more likely than not to be sustained upon examination by taxing authorities. There were \$2.6 million and \$3.1 million unrecognized tax benefits as of December 31, 2022 and 2021, respectively. The Company recognizes accrued interest and penalties related to unrecognized tax benefits as income tax expense. No amounts were accrued for the payment of interest and penalties as of December 31, 2022 and 2021. The Company is currently not aware of any issues under review that could result in significant payments, accruals or material deviation from its position.

Fair value of financial instruments

The Company defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, the Company considers the principal market or the most advantageous market in which it would transact.

The Company maximizes the use of observable inputs and minimizes the use of unobservable inputs when measuring fair value. Observable inputs are inputs that reflect the assumptions market participants would use in valuing the asset or liability and are developed based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's own assumptions about the factors that market participants would use in valuing the asset or liability developed based on the best information available in the circumstances.

The standard establishes a fair value hierarchy based on the level of independent, objective evidence surrounding the inputs used to measure fair value by requiring that the most observable inputs be used when available. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The fair value hierarchy is as follows:

- Level 1 applies to assets or liabilities for which there are quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.
- Level 2 applies to assets or liabilities for which there are inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly, such as quoted prices for similar assets or liabilities in active markets; quoted prices for identical assets or liabilities in markets with insufficient volume or infrequent transactions (less active markets).
- Level 3 applies to assets or liabilities for which fair value is derived from valuation techniques in which one or more significant inputs are unobservable, including the Company's own assumptions.

The Company determined the estimated fair value of financial instruments using available market information and valuation methodologies considered to be appropriate. The carrying amounts of cash and cash equivalents, accounts receivable and accounts payable approximate their fair values due to their short maturities. The Company's investments are recorded at fair value and vendor financing arrangements are recorded at net carrying value.

Investments

All investments in debt securities have been classified as “available-for-sale” and are carried at estimated fair value as determined based upon quoted market prices or pricing models for similar securities. Management determines the appropriate classification of its investments in debt securities at the time of purchase and reevaluates such designation as of each balance sheet date. Short-term investments have original maturities of greater than three months but one year or less as of the consolidated balance sheet dates. Long-term investments have maturities greater than one year as of the consolidated balance sheet dates. If the Company expects to sell a debt security within one year, it will classify the investment as a short-term investment regardless of its stated maturity date.

The available-for-sale securities are reported at fair value with unrealized gains and losses included in accumulated other comprehensive income (loss). A decline in the fair value of the available-for-sale securities is recognized directly to net income (loss) if judged to be other than temporary. Interest earned on investments in debt securities, realized gains and losses and impairment losses, if any, on investments in debt securities are included in interest and other income (expense), net in the consolidated statements of loss. The cost of securities sold is based on the specific-identification method.

Equity Method Investments

The Company uses the equity method to account for its investments in companies which the Company does not control but is deemed to have the ability to exercise significant influence over operating and financial decisions of the investee.

The Company generally measures an investment in the common stock of an investee initially at cost. The carrying value of the Company's equity method investments is reported in equity method investment on the consolidated balance sheets. The Company records its proportionate share of the income or loss in its equity method investments on a one-quarter lag. The cost is adjusted to recognize the Company's proportionate share of the investee's net income or loss after the date of investment. The Company assesses investments for impairment whenever events or changes in circumstances indicate that the carrying value of an investment may not be recoverable.

Distributions received from an investee reduce the carrying value of an investment and are recorded in the consolidated statements of cash flows using the nature of distribution approach.

Government Assistance

The Company's government assistance during the year ended December 31, 2022 and 2021 primarily consists of R&D tax credits granted to the Company's subsidiary in France. These R&D tax credits are granted to encourage companies to conduct technical and scientific research. For accounting purposes, the foreign R&D tax credits are recorded as an offset to research and development expenses in the Company's consolidated statements of loss. The Company recorded \$1.8 million and \$2.4 million of foreign R&D tax credit during the years ended December 31, 2022 and 2021, respectively.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In October 2021, the FASB issued ASU No. 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. This standard requires contract assets and contract liabilities acquired in a business combination to be recognized in accordance with Topic 606 as if the acquirer had originated the contracts. The guidance is effective for fiscal years beginning after December 15, 2022, including interim periods within those years and early adoption is permitted. The Company early adopted ASU 2021-08 for the year ended December 31, 2022. The adoption of the new guidance did not have a material impact on the Company's consolidated financial statements and related disclosures.

In November 2021, the FASB issued ASU No. 2021-10, *Government Assistance (Topic 832)*, which requires business entities to disclose information about certain government assistance they receive. Such disclosure requirements include the nature of the transactions and the related accounting policy used, the line items on the balance sheet and income statement that are affected and the amounts applicable to each financial statement line item and significant terms and conditions of the transactions. ASU 2021-10 is effective for annual periods beginning after December 15, 2021. The Company adopted ASU 2021-10 for the year ended December 31, 2022. The adoption of the new guidance did not have a material impact on the Company's consolidated financial statements and related disclosures.

Recently Issued Accounting Pronouncements Not Yet Adopted

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* and in May 2019 issued ASU No. 2019-05, *Credit Losses (Topic 326): Targeted Transition Relief* (collectively referred to as Topic 326), which requires the measurement and recognition of expected credit losses for financial assets held at amortized cost. Topic 326 replaces the existing incurred loss impairment model with a forward-looking expected credit loss model which will result in earlier recognition of credit losses. Topic 326 is effective for the Company for fiscal years beginning after December 15, 2022, and interim periods within those fiscal years. The Company does not expect the adoption of this guidance to have a material impact on its consolidated financial statements and related disclosures.

In September 2022, the FASB issued ASU 2022-04, *Liabilities - Supplier Finance Programs (Subtopic 405-50): Disclosure of Supplier Finance Program Obligations*, which requires a buyer in a supplier finance program to disclose sufficient information about the program to allow a user of financial statements to understand the program's nature, activity during the period, changes from period to period, and potential magnitude. To achieve that objective, the buyer should disclose qualitative and quantitative information about its supplier finance programs. The amendments in this update do not affect the recognition, measurement, or financial statement presentation of obligations covered by supplier finance program. The guidance is effective for fiscal years beginning after December 15, 2022, except for the amendment on rollforward information which is effective for fiscal years beginning after December 15, 2023, with early adoption permitted. The Company does not expect the adoption of this guidance to have a material impact on its consolidated financial statements and related disclosures.

3. REVENUE*Disaggregated Revenue*

The following table shows revenue by product and services groups (in thousands):

	Year Ended December 31,	
	2022	2021
Licensing, support and maintenance	\$ 46,012	\$ 34,731
Variable royalties	3,140	2,647
Other	1,226	486
Total	<u>\$ 50,378</u>	<u>\$ 37,864</u>

Contract Balances

The following table provides information about accounts receivable, contract assets and deferred revenue (in thousands):

	As of December 31,	
	2022	2021
Accounts receivable—net	\$ 7,143	\$ 13,873
Contract assets	\$ 1,180	\$ 1,486
Deferred revenue	\$ 50,679	\$ 49,176

During the years ended December 31, 2022 and 2021, the Company recognized revenue of \$28.2 million and \$19.1 million, respectively, that was included in the deferred revenue balance at the beginning of the fiscal year.

Contracted but unsatisfied performance obligations were \$50.7 million and \$49.3 million at the end of fiscal years 2022 and 2021, respectively, and include unearned revenue and non-cancelable FSA commitments from customers where actual product selection and quantities of specific products are to be determined by customers at a future period. FSA commitments amounted to nil and \$0.2 million at the end of fiscal years 2022 and 2021, respectively. The Company has elected to exclude the potential future royalty receipts from the remaining performance obligations. The contracted but unsatisfied or partially unsatisfied performance obligations, excluding non-cancelable FSA, expected to be recognized in revenue over the next 12 months at the end of fiscal year 2022 are \$30.9 million, with the remainder recognized thereafter.

The following table is a roll forward of contract balances as of December 31, 2022 and 2021 (in thousands):

	As of December 31,	
	2022	2021
Deferred revenue licensing, support and maintenance—beginning balance	\$ 49,176	\$ 32,908
Additions	48,741	51,485
Revenue recognized	(47,238)	(35,217)
Deferred revenue licensing, support and maintenance—ending balance	\$ 50,679	\$ 49,176

Costs of Obtaining a Contract with a Customer

Incremental costs of obtaining a contract with a customer consist primarily of direct sales commissions incurred upon execution of the contract. These costs are required to be capitalized under ASC 340-40, *Other Assets and Deferred Costs—Contracts With Customers*, and amortized over the license term. As direct sales commissions paid for term extensions are commensurate with the amounts paid for initial contracts, the deferred incremental costs for initial contracts and for term extensions are recognized over the respective contract terms. Total capitalized direct commission costs were as follows (in thousands):

	As of December 31,	
	2022	2021
Short-term commission capitalized in prepaid expenses and other current assets	\$ 2,636	\$ 2,289
Long-term commission capitalized in other assets	1,535	1,719
Total	\$ 4,171	\$ 4,008

Amortization of capitalized sales commissions were \$3.5 million and \$2.3 million during fiscal 2022 and 2021, respectively, and are included in sales and marketing expense in the consolidated statements of loss.

4. NET LOSS PER SHARE

The following table presents the calculation of basic and diluted net loss per share attributable to common stockholders (in thousands, except share and per share data):

	Year Ended December 31,	
	2022	2021
Numerator:		
Net loss	\$ (27,387)	\$ (23,384)
Denominator:		
Weighted-average shares outstanding—Basic and diluted	32,578,776	21,972,101
Net loss per share, basic and diluted	\$ (0.84)	\$ (1.06)

Since the Company was in a loss position for the years ended December 31, 2022 and 2021, the diluted earnings per share is equal to the basic earnings per share as the effect of potentially dilutive securities would have been antidilutive.

The following table summarizes the potentially dilutive securities that were excluded from the calculation of diluted earnings per share because they would be anti-dilutive:

	As of December 31,	
	2022	2021
Stock options	3,542,836	5,407,170
Restricted stock units	5,619,013	3,925,097
Restricted common shares issued for business combination (see Note 9)	331,574	—
Total	9,493,423	9,332,267

5. INVESTMENTS

The following tables summarize the fair value and amortized cost of the Company's cash equivalents and available-for-sale securities by major security type (in thousands):

	As of December 31, 2022		
	Amortized Cost	Unrealized Losses	Aggregate Fair Value
Assets:			
Money market funds	\$ 30,428	\$ —	\$ 30,428
Commercial paper	2,604	(1)	2,603
Corporate bonds	5,717	(10)	5,707
U.S. government agency securities	18,508	(40)	18,468
U.S. treasury securities	8,379	(2)	8,377
Total financial assets	\$ 65,636	\$ (53)	\$ 65,583

The maturity dates of the Company's investments are as follows (in thousands):

	December 31, 2022
Less than one year	\$ 61,156
1-2 years	4,427
Total	\$ 65,583

There were no impairments of available-for-sale securities during the year ended December 31, 2022.

The Company did not invest in any available-for-sale securities during the year ended December 31, 2021 and did not have any available-for-sale securities as of December 31, 2021.

6. FAIR VALUE MEASUREMENTS

Assets Measured and Recorded at Fair Value on a Non-Recurring Basis

Equity method investments, and certain non-financial assets, such as intangible assets and property, plant and equipment, are remeasured at fair value only if an impairment or observable price adjustment is recognized in the current period.

Financial Instruments Not Recorded at Fair Value on a Recurring Basis

Financial instruments not recorded at fair value on a recurring basis include vendor financing arrangements. The carrying value of the vendor financing agreements was \$1.7 million and \$1.1 million as of December 31, 2022 and 2021, respectively. The Company's vendor financing arrangements are classified within Level 2 because these borrowings are not actively traded and have a variable interest rate structure based upon market rates currently available to the Company for debt with similar terms and maturities. The estimated fair values of these financial instruments approximate their carrying values.

Financial Instruments Recorded at Fair Value on a Recurring Basis

The following tables summarize the Company's financial assets measured at fair value on a recurring basis by level within the fair value hierarchy (in thousands):

	As of December 31, 2022			
	Level 1	Level 2	Level 3	Fair Value
Assets:				
Cash equivalents:				
Money market funds	\$ 30,428	\$ —	\$ —	\$ 30,428
Total cash equivalents	30,428	—	—	30,428
Short-term investments:				
Commercial paper	—	2,603	—	2,603
Corporate bonds	—	3,971	—	3,971
U.S. government agency securities	—	15,777	—	15,777
U.S. treasury securities	—	8,377	—	8,377
Total short-term investments	—	30,728	—	30,728
Long-term investments:				
Corporate bonds	—	1,736	—	1,736
U.S. government agency securities	—	2,691	—	2,691
Total long-term investments	—	4,427	—	4,427
Total financial assets	\$ 30,428	\$ 35,155	\$ —	\$ 65,583

Money market funds are highly liquid investments and are actively traded. The fair value is based on quoted prices for identical assets in active markets and therefore classified as Level 1 of the fair value hierarchy.

The Company's other investments are considered Level 2 financial instruments as their fair values are determined using inputs that are directly or indirectly observable in active or less active markets. There were no transfers between levels during the year ended December 31, 2022.

The Company did not have any investments in available-for-sale securities as of December 31, 2021.

7. INTANGIBLE ASSETS AND GOODWILL

Intangible assets, net

Intangible assets, net consisted of the following as of December 31, 2022 (in thousands):

	Gross Fair Value	Accumulated Amortization	Net Book Value
Developed technology	\$ 3,090	\$ (708)	\$ 2,382
Customer relationships	1,830	(287)	1,543
IPR&D	500	—	500
Trade name and other	150	—	150
Total intangibles	\$ 5,570	\$ (995)	\$ 4,575

Intangible assets, net consisted of the following as of December 31, 2021 (in thousands):

	Gross Fair Value	Accumulated Amortization	Net Book Value
Developed technology	\$ 1,700	\$ (368)	\$ 1,332
Customer relationships	1,100	(149)	951
IPR&D	500	—	500
Trade name and other	176	—	176
Total intangibles	<u>\$ 3,476</u>	<u>\$ (517)</u>	<u>\$ 2,959</u>

Amortization expense of intangible assets was \$0.5 million for both the years ended December 31, 2022 and 2021.

The expected future amortization expense of these intangible assets as of December 31, 2022 is as follows (in thousands):

2023	\$ 767
2024	767
2025	739
2026	427
2027 and thereafter	1,225
Total future amortization expense	<u>\$ 3,925</u>

Goodwill

As of December 31, 2022 and 2021, goodwill was \$4.2 million and \$2.7 million, respectively. No goodwill impairments were recorded during the years ended December 31, 2022 and 2021.

8. BALANCE SHEET COMPONENTS

Accounts Receivable, net

The following table presents the components of accounts receivable, net, (in thousands):

	As of December 31,	
	2022	2021
Accounts receivable	\$ 6,631	\$ 13,674
Unbilled accounts receivable	762	509
Total accounts receivable	<u>7,393</u>	<u>14,183</u>
Less: allowance for doubtful accounts	(250)	(310)
Total accounts receivable, net	<u>\$ 7,143</u>	<u>\$ 13,873</u>

The allowance for doubtful accounts was \$0.3 million as of both December 31, 2022 and 2021.

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following (in thousands):

	As of December 31,	
	2022	2021
Capitalized commissions asset, net	\$ 2,636	\$ 2,289
Insurance	1,372	74
Software & subscriptions	691	388
Contract assets	669	634
Foreign R&D tax credit receivable	—	2,828
Other	450	736
Total prepaid expenses and other current assets	\$ 5,818	\$ 6,949

Property and Equipment, net

Property and equipment consisted of the following (in thousands):

	As of December 31,	
	2022	2021
Software and technology equipment	\$ 6,131	\$ 4,067
Office furniture and hardware equipment	395	305
Leasehold improvements	299	295
Construction in progress	282	—
Vehicles	7	7
Total property and equipment	7,114	4,674
Less: accumulated depreciation and amortization	(3,497)	(2,236)
Total property and equipment—net	\$ 3,617	\$ 2,438

Depreciation and amortization expenses related to property and equipment for the years ended December 31, 2022 and 2021, was \$1.6 million and \$1.0 million, respectively.

Other Assets

Other assets consisted of the following (in thousands):

	As of December 31,	
	2022	2021
Foreign R&D tax credit receivable	\$ 1,565	\$ —
Capitalized commissions asset, net	1,392	1,576
Contract assets	511	852
Capitalized third party commissions asset, net	143	143
Security deposits	118	190
Other	58	196
Total other assets	\$ 3,787	\$ 2,957

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consisted of the following (in thousands):

	As of December 31,	
	2022	2021
Payroll and related benefits	\$ 8,182	\$ 6,616
Deferred and contingent consideration	1,696	1,668
Deferred income	1,179	—
Accrued professional fees	851	1,292
Other accrued liabilities	187	997
Total accrued expenses and other current liabilities	\$ 12,095	\$ 10,573

Other Liabilities

Other liabilities consist of the following (in thousands):

	As of December 31,	
	2022	2021
Pension accrual	\$ 676	\$ 820
Retirement benefit liability	346	68
Contingent consideration	—	1,269
Total other liabilities	\$ 1,022	\$ 2,157

9. ACQUISITION**Semifore Acquisition**

On December 27, 2022, the Company acquired 100% of the issued and outstanding equity securities (the Acquisition) of Semifore, Inc. (Semifore). Prior to the acquisition, Semifore was a privately held provider of hardware, software interface (HSI) technology. Semifore technologies are used to effectively design, verify, document, and help in the validation of the hardware-software integration that is used in the SoC complex chip market. The addition of Semifore technologies and team expertise augments Arteris System IP and IP deployment automation to further enhance software control of the IP and SoC hardware. The Acquisition closed on December 27, 2022 and has been accounted for in accordance with the acquisition method of accounting for business combinations with the Company as the accounting acquirer.

The consideration transferred for the acquisition is as follows (in thousands):

	DECEMBER 27, 2022
Cash consideration paid at closing	\$ 1,388
Stock consideration (331,569 shares of the Company's common stock)	1,333
Contingent consideration	362
Total consideration	\$ 3,083

In connection with the acquisition, key employees and former owners of Semifore were issued a total of 663,143 shares of the Company's common stock and obtained the right to additional cash payment totaling \$1.8 million. Out of the 663,143 shares issued, 331,569 shares of common stock vested as of the closing date and the remaining 331,574 shares and \$1.8 million cash payment will vest on the first and third anniversary of the closing date if certain key employees continue to be employed by the Company. These contingent cash payments and equity awards have been accounted for separately from the business combination and will be recognized by the Company as compensation costs in the subsequent periods as related services are provided. Refer to Note 14 for additional information about the equity awards.

The Company incurred acquisition-related expenses associated with the Semifore transaction in a total amount of \$0.5 million, which were expensed as incurred and included in general and administrative expenses in the consolidated statements of income (loss) for the year ended December 31, 2022. These acquisition-related costs included legal, accounting, and other professional and consulting fees.

Under the acquisition method of accounting, the purchase price is allocated to identifiable assets acquired and liabilities assumed based on their fair values on the acquisition date. The following table provides the estimated fair values of the identifiable assets acquired and liabilities assumed as of the acquisition date (in thousands):

	FAIR VALUE
Cash	\$ 267
Accounts receivable	372
Prepaid expenses and other current assets	63
Contract assets	15
Intangibles	2,120
Accounts payable	(139)
Deferred revenue	(672)
Deferred tax liability	(484)
Total identifiable net assets	1,542
Goodwill	1,541
Total purchase price	\$ 3,083

The following table summarizes the fair value of the identifiable intangible assets acquired (in thousands) and weighted-average useful life:

	2022	WEIGHTED AVERAGE USEFUL LIFE
Developed technology	\$ 1,390	7 years
Customer relationships	730	8 years
Estimated fair value of intangible assets	\$ 2,120	

Goodwill generated from this business combination is attributed to synergies between the Company's and Semifore's respective products and services and is housed within the Company's single operating segment. The Company recorded \$0.5 million deferred tax liability as a result of the Acquisition. The Company does not have any tax basis in the total goodwill of \$1.5 million and the goodwill is non-deductible for income tax purposes. The revenue and earnings of the acquired business have been included in the Company's results since the acquisition date and are not material to the Company's consolidated financial results.

Pro forma results of operations for the acquisition have not been presented because they are not material to the Company's consolidated results of operations.

Magillem Acquisition

On November 30, 2020, the Company, through Arteris IP SAS, its wholly owned subsidiary, completed the acquisition of Magillem Design Services SA (Magillem), by acquiring certain assets and assumed liabilities of Magillem in an all-cash transaction to expand the Company's IP deployment technology. Magillem is a leading provider of complex design flow and content management software solutions.

The total purchase consideration was \$7.8 million, of which \$2.8 million was the estimated contingent consideration which represents the fair value of additional consideration payable to the seller upon (a) the achievement of specified milestones, estimated using the income approach and (b) in relation to potential indemnity claims. The contingent consideration payments are tied to a number of metrics, including claims received by the Company and certain product development, customer and revenue metrics in the next one to three years. As of December 31, 2022, the estimated contingent consideration relating to Magillem was \$1.3 million after the settlement of \$1.5 million liability in 2022, recorded as part of accrued expenses and other current liabilities on the Company's consolidated balance sheets.

10. LEASES

The Company leases its offices and data center hosting space at various locations under noncancelable operating lease agreements expiring at various dates through 2027. Under the terms of these agreements, the Company also bears the costs for certain insurance, property tax, and maintenance. The terms of certain lease agreements provide for increasing rental payments at fixed intervals.

Total operating lease related costs were as follows (in thousands):

	Year Ended December 31,	
	2022	2021
Operating lease cost	\$ 1,059	\$ 1,096
Short-term lease cost	309	134
Total lease cost	\$ 1,368	\$ 1,230

The weighted-average remaining term of the Company's operating leases was 3.1 years and 3.6 years as of December 31, 2022 and 2021, respectively, and the weighted-average discount rate used to measure the present value of the operating lease liabilities was 7.5% as of December 31, 2022 and 2021.

Maturities of operating lease liabilities as of December 31, 2022 were as follows (in thousands):

Fiscal year ending December 31,

2023	\$ 990
2024	449
2025	278
2026	212
2026 and thereafter	212
Total undiscounted cash flows	2,141
Less: Imputed interest	(233)
Present value of lease liabilities	\$ 1,908
Lease liabilities, current	\$ 899
Lease liabilities, noncurrent	1,009
Total lease liabilities	\$ 1,908

11. BORROWINGS

Term loans—In November 2018, the Company entered into a business financing agreement (2018 Term Loan) of \$1.5 million with Western Alliance Bank. The 2018 Term Loan was fully repaid in November 2021 and was not renewed.

Vendor financing arrangements—The Company has various vendor financing arrangements with extended payment terms on the purchase of software licenses and equipment. In order to determine the present value of the commitments, the Company used an imputed interest rate ranging from 7.5% to 10.0%, which is reflective of its collateralized borrowing rate with similar terms to that of the software licenses and equipment transactions.

Vendor financing arrangements as of December 31, 2022 were as follows (in thousands):

2023	\$	1,264
2024		556
Total undiscounted cash flows		1,820
Less: Imputed interest		(108)
Present value of vendor financing arrangements	\$	1,712
Vendor financing arrangements, current	\$	1,264
Vendor financing arrangements, noncurrent		448
	\$	1,712

Interest expense from Vendor financing arrangements was \$0.1 million for the year ended December 31, 2022.

Interest expense from Term Loan and Vendor financing arrangements was \$0.1 million for the year ended December 31, 2021.

12. COMMITMENTS AND CONTINGENCIES

Indemnifications—The Company often enters into limited indemnification provisions in license agreements in the ordinary course of the Company's licensing business. Pursuant to these provisions, which are often inserted into license agreements in the semiconductor IP and software licensing industries, the Company agrees to indemnify, hold harmless, and reimburse the indemnified parties up to a capped amount for losses suffered or incurred by such indemnified parties due to third party claims if such claims are determined to be caused by the Company. The term of these indemnification provisions is generally either for a term of years or perpetual, in each case beginning on the execution date of the agreement. The Company has also agreed to indemnify under indemnity agreements with its directors and officers, to the extent legally permissible, against liabilities incurred in connection with any action in which such individual may be involved by reason of such individual being or having been a director or officer, other than certain liabilities arising from willful misconduct of the individual.

The Company has incurred no actual payment obligations from these above-noted indemnification provisions and director and officer indemnity agreements during 2022 and 2021, and the consolidated financial statements do not include liabilities for any potential indemnity-related obligations as of December 31, 2022 and 2021.

Legal—The Company has been and will continue to be subject to legal proceedings and claims.

In the normal course of business, the Company may receive inquiries or become involved in legal disputes regarding such litigation matters. Pursuant to ASC 450, *Contingencies*, the Company makes a provision for a liability relating to legal matters when it is both probable that a liability has been incurred, and the amount of the loss can be reasonably estimated. These provisions are reviewed at least quarterly and adjusted to reflect the impacts of negotiations, estimated settlements, legal rulings, advice of legal counsel and other information and events pertaining to a particular matter.

In December 2022, the Company received notice of a complaint filed against the Company and two other defendants that are entities in the semiconductor industry by Network System Technologies, LLC in the United States District Court for the Western District of Texas, and two additional complaints were filed in the Eastern District of Texas against certain companies, including some customers of the Company, asserting among other things patent infringement relating to the Company's technology and seeking damages and injunctive relief. The Company intends to vigorously defend itself in respect to these complaints, and anticipates an increase in legal expenses to do so.

Due to the inherent uncertainties and complex technical issues arising from such intellectual property litigation, the Company cannot predict or guarantee any result of such intellectual property litigation. As with any such litigation at its initial stages, the Company cannot comment on the possible final litigation results of ongoing litigation or the risk whether the Company may not prevail in such intellectual property litigation. In addition, such litigation may make it necessary to support or defend the Company or the Company's customers relating to the claims in the litigation.

Further, the ultimate outcome of the litigation, like any litigation, is uncertain and, regardless of outcome, litigation can have an adverse impact on the Company because of defense costs, potential negative publicity, diversion of management resources and other factors, which in turn may have a material adverse impact on the Company's business, consolidated financial position, results of operations, or cash flows. As intellectual property claims are inherently unpredictable, the Company is currently evaluating whether such matters may have a material adverse effect on the Company's financial position, results of operations, or cash flows.

In addition, significant judgement is required in both the determination of probability and determination as to whether a loss is reasonably estimable. Future revisions to such estimates could materially impact the Company's results. Accordingly, there can be no assurance that existing or any future legal proceedings for liability estimates arising in the ordinary course of business or otherwise will not have a material adverse effect on the Company's business, consolidated financial position, results of operations or cash flows.

The Company has no other material contractual noncancelable commitments as of December 31, 2022 and December 31, 2021.

13. REDEEMABLE CONVERTIBLE PREFERRED STOCK, PREFERRED STOCK AND COMMON STOCK

Redeemable Convertible Preferred Stock

Immediately prior to the closing of the IPO, all shares of the Company's redeemable convertible preferred stock outstanding, totaling 4,471,316, were automatically converted into an equal number of shares of common stock and their carrying value of \$5.7 million was reclassified into stockholders' equity. As of both December 31, 2022 and 2021, there were zero shares of redeemable convertible preferred stock issued and outstanding.

Preferred Stock

In connection with the IPO, the Company amended and restated its certificate of incorporation to authorize 10,000,000 shares of preferred stock with a par value of \$0.001, which shares of preferred stock are currently undesignated.

Common Stock

Holders of common stock are entitled to one vote per share and to receive dividends and, upon liquidation or dissolution, are entitled to receive all assets available for distribution to common stockholders. The common stock has no preemptive or other subscription rights and there are no redemption or sinking fund provisions with respect to such shares. Common stock is subordinate to the preferred stock with respect to dividend rights and rights upon liquidation, winding-up, and dissolution of the Company. In connection with the IPO, the Company amended and restated its certificate of incorporation to authorize 300,000,000 shares of common stock.

During the year ended December 31, 2021, 1,250,000 shares of the Company's common stock were sold to third-party investors for an aggregate amount of \$5.4 million.

Stock Repurchases

There were no repurchased shares for the years ended December 31, 2022 and 2021.

14. STOCK-BASED COMPENSATION

2016 Stock Plan

On October 10, 2016, the Company amended and restated the 2013 Equity Incentive Plan and changed the name of the plan to Arteris, Inc. 2016 Incentive Plan (the 2016 Plan). Adoption of the 2016 Plan provides for participation by foreign nationals or those employed outside of the United States.

The 2016 Plan provides for the granting of the following types of stock awards: incentive stock options, non-statutory stock options, stock appreciation rights (SARs), restricted stock awards, restricted stock unit awards (RSUs) and other stock awards. The number of shares authorized for award was 20,803,838. The Company granted awards of common stock in the form of 14,142,208 shares as of December 31, 2021. Following the Company's IPO in October 2021, all future grants will be made under the 2021 Plan (as defined below), with none remaining available for future grant under the 2016 Plan.

2021 Stock Plan

The Company adopted the 2021 Incentive Award Plan (the 2021 Plan) effective October 26, 2021. The 2021 Plan provides for a variety of stock-based compensation awards, including stock options, SARs, restricted stock awards, restricted stock unit awards, performance bonus awards, performance stock unit awards, dividend equivalents, or other stock or cash based awards.

Following the effectiveness of the 2021 Plan, the Company will not make any further grants under the 2016 Plan. However, the 2016 Plan will continue to govern the terms and conditions of the outstanding awards granted under this plan. Shares of common stock subject to awards granted under the 2016 Plan that are forfeited or lapse unexercised and withheld to cover taxes which following the effective date of the 2021 Plan are not issued under the 2016 Plan will be available for issuance under the 2021 Plan.

2021 Employee stock purchase plan

The Company adopted the 2021 Employee Stock Purchase Plan (the 2021 ESPP) effective on October 26, 2021. The 2021 ESPP will enable eligible employees of the Company to purchase shares of common stock at a discount to fair market value. As of December 31, 2022, there had been no offering period under the ESPP.

2022 Employment Inducement Incentive Plan

The Company adopted the 2022 Employment Inducement Incentive Plan (the 2022 Plan) effective November 3, 2022. The 2022 Plan provides for a variety of stock-based compensation awards, including stock options, SARs, restricted stock awards, restricted stock unit awards, performance bonus awards, performance stock unit awards, dividend equivalents, or other stock or cash based awards. Awards under the 2022 Plan can only be made to newly hired employees.

Shares Available for Future Grant

Shares available for future grant consisted of the following:

	As of December 31,	
	2022	2021
Shares available for future grant under the 2021 Plan	3,318,979	3,493,240
Shares available for future grant under the 2021 ESPP	922,306	607,000
Shares available for future grant under the 2022 Plan	1,489,163	—

The Company issues new shares upon a share option exercise or release of restricted stock units.

Stock Options

The following table summarizes the stock option activities under the Company's 2016 Plan:

	Options Outstanding			
	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Values (\$'000s)
Balances—December 31, 2021	5,407,170	\$ 0.96	7.16	\$ 108,964
Granted	—	—		
Exercised	(1,451,784)	0.60		
Canceled	(412,550)	1.18		
Balance—December 31, 2022	3,542,836	\$ 1.08	6.17	\$ 11,416
Options vested and exercisable—December 31, 2022	2,752,055	\$ 0.96	5.80	\$ 9,200
Options vested and exercisable—December 31, 2021	3,209,726	\$ 0.62	6.36	\$ 65,752

The aggregate intrinsic value of the options exercised for the years ended December 31, 2022 and 2021 was \$11.7 million and \$9.0 million, respectively. The total grant-date fair value of options vested was \$0.3 million and \$0.5 million for the years ended December 31, 2022 and 2021, respectively.

The amount of cash received by the Company for the exercise of stock options was \$0.9 million and \$0.6 million for the years ended December 31, 2022 and 2021, respectively.

As of December 31, 2022, there was \$0.4 million of unamortized stock-based compensation cost related to unvested stock options, which is expected to be recognized over a weighted-average period of 1.8 years.

Stock options granted generally have a maximum term of ten years from the grant date and generally vest over a period of four years with 25% vesting after one year and then monthly thereafter for three years.

The fair value of each stock option granted is estimated using the Black-Scholes option-pricing model. The Company determines valuation assumptions for Black-Scholes as follows:

Risk-Free Interest Rate—The Company bases the risk-free interest rate used in the Black-Scholes option-pricing model on the implied yield available on US Treasury zero coupon issues with an equivalent expected term of the options for each option group.

Expected Term—The expected term represents the period that the Company's stock-based awards are expected to be outstanding. The expected term assumption is based on the simplified method. The Company expects to continue using the simplified method until sufficient information about the Company's historical behavior is available.

Volatility—The Company determines the price volatility factor based on the historical volatilities of the Company's peer group as the Company does not have sufficient trading history for its common stock.

Dividend Yield—The Company has never declared or paid any cash dividend and does not currently plan to pay a cash dividend in the foreseeable future. Consequently, the Company used an expected dividend yield of zero.

The Company had no stock option grants during the years ended December 31, 2022 and 2021.

Restricted Stock Units and Awards

The following table summarizes the restricted stock unit activities under the Company's 2016 Plan, 2021 Plan and 2022 Plan:

	Restricted Stock Units	
	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Unvested—December 31, 2021	3,925,097	\$ 5.60
Granted	3,419,030	\$ 9.10
Vested	(1,223,312)	\$ 6.05
Canceled	(501,802)	\$ 10.04
Unvested—December 31, 2022	5,619,013	\$ 7.24

The total grant-date fair value of restricted stock units vested was \$7.4 million and \$0.4 million during the years ended December 31, 2022 and 2021.

As of December 31, 2022, there was \$32.3 million of unamortized stock-based compensation cost related to unvested restricted stock units, which is expected to be recognized over a weighted-average period of 3.1 years.

For RSUs granted under the 2016 Stock Plan, it contains both a service-based vesting condition and a performance-based vesting condition. The service-based vesting condition for these awards is generally satisfied by rendering continuous service for approximately four years, during which time the grants will vest periodically. The performance-based vesting condition of certain awards is satisfied in connection with the Company becoming a publicly listed company or a change in control.

For RSUs granted under the 2021 Stock Plan and 2022 Plan, they contain the service-based vesting condition for these awards and it is generally satisfied by rendering continuous service typically satisfied over four years with a cliff vesting period of one year and continued vesting quarterly thereafter.

Restricted Common Stock

In connection with the Semifore Acquisition (refer to Note 9), the Company issued 331,574 shares of common stock that will vest on the first and third anniversary of the closing of the Acquisition contingent on the continued employment of certain key employees. As of December 31, 2022, 331,574 shares of common stock remain unvested. These shares had a grant date fair value of \$1.3 million based on the closing stock price on the acquisition date. The Company will recognize total compensation cost of \$1.3 million to be amortized on a straight-line basis over the total vesting period of three years. As of December 31, 2022, the total unamortized compensation cost was \$1.3 million.

Stock-based Compensation

Stock-based compensation expense is recorded on a departmental basis, based on the classification of the award holder. The following table presents the amount of stock-based compensation related to stock-based awards to employees on the Company's consolidated statements of loss (in thousands):

	Year Ended December 31,	
	2022	2021
Cost of revenue	\$ 562	\$ 218
Research and development	5,865	3,495
Sales and marketing	2,123	579
General and administrative	3,142	1,218
Total stock-based compensation	\$ 11,692	\$ 5,510

15. EQUITY METHOD INVESTMENT

On February 21, 2022, Arteris IP (Hong Kong) Ltd. (AHK), a wholly-owned subsidiary of the Company, entered into a Share Purchase and Shareholders Agreement (the SPA) with certain investors and Ningbo Transchip Information Consulting Partnership (Limited Partnership) (Management Co). The transaction closed on June 20, 2022.

The Company, the investors and Management Co, pursuant to the SPA, subscribed to the registered capital of Transchip Technology (Nanjing) Co., Ltd. (Transchip), a formerly wholly-owned subsidiary of the Company. As a result, the registered capital of Transchip increased to \$29.4 million. The Company subscribed for the registered capital of approximately \$11.9 million, of which \$11.6 million of the contribution was contributed in-kind by way of an interconnect solutions technology license by the Company pursuant to a five-year technology license and services agreement which can be extended automatically for another five-year term, and the remaining was paid in cash.

The license agreement provides Transchip the right to software licenses, services, software updates and technical support. On the closing date, the license agreement including the support and maintenance services to be provided to Transchip was valued to be \$11.6 million, which was recorded as deferred income and will be recognized as interest and other income (expense), net over a period of ten years on a straight line basis after delivery of the license. The license was delivered to Transchip on September 2, 2022. For the year ended December 31, 2022, the Company recognized income of \$0.4 million for the license agreement.

Deconsolidation of Transchip as a subsidiary

Before the closing of the transaction, Transchip was a wholly-owned subsidiary of the Company with limited operations. Upon closing of the transaction, the Company no longer has control, and therefore deconsolidated Transchip. Accordingly, upon closing of the transaction, the Company derecognized all the assets and liabilities of Transchip and recognized a disposal gain of \$0.1 million, included in interest and other income (expense), net in the consolidated statements of loss for the year ended December 31, 2022.

Upon deconsolidation, the Company also recorded a nine-month related party loan to Transchip of \$0.3 million, in prepaid expenses and other current assets within its consolidated balance sheet, which was previously eliminated as an intercompany loan in the Company's consolidated financial statements. This loan carries an annual interest rate of 4% and expired on August 31, 2022. The Company received the payment of principal and interest of \$0.3 million on September 2, 2022.

Investment of Transchip as an equity investee

Following the consummation of the foregoing transactions, the Company held 40.3% common stock of Transchip on a fully diluted basis. The Company accounts for its common stock investment in Transchip as an equity method investment as it does not control but has significant influence over operating and financing policies of Transchip. Transchip is the Company's only equity method investment. The Company invested \$12.2 million, including transaction costs of \$0.3 million in Transchip.

On September 15, 2022, Transchip completed a second funding with additional investors. The Company did not provide additional investments in the second funding. As a result, the Company's ownership interest in Transchip was diluted to 35.0% of the common stock of Transchip on a fully diluted basis. The impact to the Company's consolidated statements of loss was immaterial.

As of December 31, 2022, the carrying value of the investment in Transchip was \$11.9 million. There was no significant difference between the Company's carrying value of the investment in Transchip and its share of underlying equity in net assets of Transchip. The Company's loss from its proportionate share of its equity method investment in Transchip was \$0.3 million for the year ended December 31, 2022. The Company concluded that there were no indicators of impairment related to the Company's equity method investment in Transchip as of December 31, 2022.

16. INCOME TAXES

For financial reporting purposes, loss before provision for income taxes, includes the following components (in thousands):

	Year Ended December 31,	
	2022	2021
Domestic	\$ (21,522)	\$ (11,253)
Foreign	(6,282)	(11,091)
Loss before provision for income taxes	\$ (27,804)	\$ (22,344)

Provision for (benefit from) Income Taxes

The provision for (benefit from) income taxes consists of the following (in thousands):

	Year Ended December 31,	
	2022	2021
Current:		
Federal	\$ 1	\$ 13
State	25	17
Foreign	40	904
Total current	66	934
Deferred:		
Federal	(435)	—
State	(48)	—
Foreign	—	106
Total Deferred tax	(483)	106
Provision for (benefit from) income taxes	\$ (417)	\$ 1,040

Income tax provision (benefit) related to continuing operations differ from the amounts computed by applying the statutory income tax rate of 21% to pretax loss as follows:

	Year Ended December 31,	
	2022	2021
U.S. Federal (provision) benefit		
At Statutory Rate	21.0 %	21.0 %
State Taxes	3.9 %	0.6 %
Valuation Allowance	(28.3)%	(33.1)%
Foreign Tax Differential	0.1 %	6.0 %
Tax Credits	6.3 %	2.0 %
Stock Based Compensation	(0.9)%	(1.0)%
M&A Transaction Costs	(0.4)%	0.0 %
Foreign Earnings and Adjustments	(3.2)%	(0.2)%
Foreign Withholding Tax	(0.1)%	(0.8)%
Other	3.1 %	0.8 %
Total	1.5 %	(4.7)%

Deferred Tax Assets and Liabilities

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

	Year Ended December 31,	
	2022	2021
Deferred Tax Assets:		
Federal & State NOL carryforward	\$ 1,419	\$ 853
Research & Other credits	8,318	5,598
Capitalized R&D	3,812	—
Deferred revenue	9,148	8,380
Reserves and accruals	1,162	1,000
Stock-based compensation	1,481	953
Other intangibles	427	327
Lease liabilities	137	279
Total Gross Deferred tax asset	25,904	17,390
Less: Valuation allowance	(24,631)	(16,390)
Total Deferred tax assets	\$ 1,273	\$ 1,000
Deferred Tax Liabilities:		
Other intangibles	\$ (494)	\$ —
Property and equipment	(517)	(290)
Prepaid expenses	(135)	(447)
Right-of-use assets	(127)	(263)
Total Gross Deferred tax liabilities	\$ (1,273)	\$ (1,000)
Net Deferred tax assets	\$ —	\$ —

The provisions of ASC Topic 740, Accounting for Income Taxes (ASC 740), require an assessment of both positive and negative evidence when determining whether it is more likely than not that deferred tax assets are recoverable. For the years ended December 31, 2022 and 2021, based on all available objective evidence, including the existence of cumulative losses, the Company determined that it was not more likely than not that the net deferred tax assets were fully realizable. Accordingly, the Company determined that a full valuation allowance against its U.S. (federal and state), French and China deferred tax assets is appropriate. The Company intends to maintain a full valuation allowance on net deferred tax assets until sufficient positive evidence exists to support reversal of the valuation allowance. During the years ended December 31, 2022 and 2021, the valuation allowance was \$24.6 million and \$16.4 million, respectively.

The valuation allowance increased by \$8.2 million and \$7.4 million during the years ended December 31, 2022 and 2021, respectively, primarily due to changes in the U.S. research and development tax credits, stock compensation deferred tax assets, and capitalized research and experimental expenses. The Company recorded an income tax benefit as a result of release of a portion of its valuation allowance for the year ended December 31, 2022 related to the acquisition of Semifore.

Net Operating Loss and Tax Credit Carryforwards

As of December 31, 2022, the Company had \$2.9 million net operating loss carryforward for federal income tax purposes, all of which have an indefinite carryforward. The Company had a total state net operating loss carryforward of approximately \$8.3 million, which will begin to expire in 2030. Utilization of some of the federal and state net operating loss and credit carryforwards are subject to annual limitations due to the "change in ownership" provisions of the Internal Revenue Code of 1986 and similar state provisions. The annual limitations may result in the expiration of net operating losses and credits before utilization.

The Company has federal research and development tax credits of approximately \$4.9 million, which will begin to expire in 2035 and California research and development tax credits of approximately \$3.4 million which can be carried forward indefinitely. These tax credits are subject to the same limitations discussed above.

Unrecognized Tax Benefits

The Company adopted the provisions of ASC 740, which requires companies to determine whether it is “more likely than not” that a tax position will be sustained upon examination by the appropriate taxing authorities before any tax benefit can be recorded in the financial statements. It also provides guidance on the recognition, measurement, classification and interest and penalties related to uncertain tax positions.

The Company has the following activity relating to unrecognized tax benefits (in thousands):

	Year Ended December 31,	
	2022	2021
Beginning balance	\$ 3,111	\$ 2,522
Gross decreases—Tax Positions in Prior Periods	(921)	(25)
Gross increases—Tax Positions in Current Period	405	614
Ending balance	<u>\$ 2,595</u>	<u>\$ 3,111</u>

The unrecognized tax benefits, if recognized, would not affect the effective income tax rate due to the valuation allowance that currently offsets deferred tax assets. There were no interest or penalties. The Company does not expect the unrecognized tax benefits to change significantly over the next twelve months.

The Company files federal and state income tax returns. For U.S. federal and state income tax purposes, the statute of limitations currently remains open for the years ending December 31, 2019 to present and December 31, 2018 to present, respectively. In addition, all of the net operating losses and research and development credit carryforwards since inception that could be utilized in future years may be subject to examination. There are currently no pending income tax examinations.

17. DEFINED CONTRIBUTION PLAN AND BENEFIT PLANS

The Company has a 401(k) plan to provide defined contribution retirement benefits for all of its US based employees. Employees may elect to contribute a portion of their pretax compensation to the 401(k) plan, subject to the U.S. Internal Revenue Service annual contribution limit. Employee contributions are fully vested at all times. For the years ended December 31, 2022 and 2021, the Company contributed \$0.8 million and \$0.4 million to the 401(k) plan, respectively.

The Company has two defined benefit pension plans (the Plans), and both Plans are outside the United States. One of the defined benefit plans was assumed as a result of the acquisition of Magillem during the year ended December 31, 2020. The Plans cover all employees of the Company’s French subsidiary in accordance with French regulations. The Plans are unfunded and accounted for under the credit method and is subject to an actuarial measurement of what the Company needs at the present time to cover the future pension liabilities, including expected future salary increases.

Components of the net periodic pension costs and changes in benefit obligations under the Plan were as follows (in thousands):

	Year Ended December 31,	
	2022	2021
Service costs	\$ 128	\$ 106
Interest costs	8	3
Total net periodic pension cost	<u>\$ 136</u>	<u>\$ 109</u>

	As of December 31,	
	2022	2021
Benefit obligation, beginning of year	\$ 820	\$ 717
Service costs	128	106
Interest costs	8	3
Net actuarial (gain) loss	(235)	50
Foreign exchange gain	(45)	(56)
Benefit obligation, end of year, included as part of other liabilities	\$ 676	\$ 820

Weighted-average assumptions used to determine benefit obligations were as follows:

	As of December 31,	
	2022	2021
Discount rate	3.70 %	0.98 %
Rate of compensation increase	3.00 %	3.00 %

18. RELATED PARTY TRANSACTIONS

The Company defines related parties as directors, executive officers, nominees for director, stockholders that have significant influence over the Company, or are a greater than 10% beneficial owner of the Company's capital and their affiliates or immediate family members.

In November 2020, the Company entered into a lease agreement with Isabelle Geday, a member of the Board of Directors. The lease payments were \$0.2 million for both the years ended December 31, 2022 and 2021, respectively. In addition, the Company signed a consulting agreement with Ms. Geday on December 1, 2021, which was subsequently assigned to Magillem Design Services S.A., effective January 10, 2022. Prior to signing the consulting agreement, Ms. Geday was paid as an executive employee of the Company from December 1, 2020 through November 30, 2021. As a consultant, Ms. Geday will provide services for an initial three-year term and is eligible to receive \$26,445 per month for the first 12 months of the consulting term and \$19,445 per month for the remaining 24 months of the consulting term. For the years ended December 31, 2022 and 2021, the Company paid Ms. Geday \$0.3 million and less than \$0.1 million for consulting services, respectively. Lastly, the 455,000 stock options and 62,200 RSUs granted in connection with Ms. Geday's prior employment and 6,250 RSUs granted as a member of the Board of Directors of the Company continue to vest.

In December 2022, the Company entered into a three-month non-exclusive evaluation license agreement with Transchip. Under the agreement, the Company licensed certain technology products for no licensing fee. Refer to Note 15 for additional discussion on the Company's transactions with Transchip.

19. SEGMENT AND GEOGRAPHIC INFORMATION

The Company's CODM, reviews operating results on an aggregate basis and manages the Company's operations as a whole for the purpose of evaluating financial performance and allocating resources. The Company thus operates in one reportable segment which, as more fully described in [Note 2](#), provides NoC interconnect semiconductor IP and IP deployment technology for a wide range of applications.

Refer to [Note 2](#) for information about customers which account for more than 10% of total revenue. Refer to [Note 3](#) for a summary of revenue by major product and service group.

The following table summarizes revenues by geographic area based on customer location (in thousands):

	Year Ended December 31,			
	2022		2021	
Americas	\$ 20,697	41.1 % ⁽¹⁾	\$ 16,433	43.4 % ⁽¹⁾
Asia Pacific	23,133	45.9 % ⁽²⁾	16,748	44.2 % ⁽²⁾
Europe, Middle East	6,548	13.0	4,683	12.4
	<u>\$ 50,378</u>	<u>100.0 %</u>	<u>\$ 37,864</u>	<u>100.0 %</u>
(1) United States	\$ 20,489	40.7 %	\$ 16,311	43.1 %
(1) Other Americas *	208	0.4 %	122	0.3 %
(2) China	14,522	28.8 %	10,257	27.1 %
(2) Other Asia Pacific*	8,611	17.1 %	6,491	17.1 %

* Other countries individually less than 10%

The following table summarizes property and equipment, net by geographic area (in thousands):

	As of December 31,			
	2022		2021	
United States	\$ 2,746	75.9 %	\$ 1,626	66.7 %
France	857	23.7 %	803	32.9 %
Other	14	0.4 %	9	0.4 %
	<u>\$ 3,617</u>	<u>100.0 %</u>	<u>\$ 2,438</u>	<u>100.0 %</u>

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosures

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, our management recognizes that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable assurance that the objectives of the disclosure controls and procedures are met. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this Annual Report on Form 10-K, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s Annual Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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 the policies or procedures may deteriorate.

Management has assessed the effectiveness of our internal control over financial reporting based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013 framework). Based on our evaluation, management has concluded that our internal control over financial reporting was effective at the reasonable assurance level as of December 31, 2022. This Annual Report does not include an attestation report by our independent registered public accounting firm regarding internal control over financial reporting. Management’s report was not subject to attestation by our registered public accounting firm pursuant to rules of the SEC that permit us to provide only management’s report in this Annual Report.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

We have adopted a code of ethics for directors, officers (including our principal executive officer, principal financial officer and principal accounting officer) and employees, known as the Code of Business Conduct and Ethics. This code is publicly available on our website at ir.arteris.com under the Corporate Governance section. If we make any amendments to this code other than technical, administrative or other non-substantive amendments, or grant any waivers, including implicit waivers, from a provision of this code we will disclose the nature of the amendment or waiver, its effective date and to whom it applies on our website at arteris.com or in a Current Report on Form 8-K filed with the SEC.

The remaining information required by this item, including information about our Directors, Executive Officers and Audit Committee, is incorporated by reference to the definitive Proxy Statement for our 2023 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after December 31, 2022.

Item 11. Executive Compensation

The information required by this Item will be set forth in the section headed “Executive Compensation” in our Proxy Statement and is incorporated in this Annual Report by reference.

Item 12. Security Ownership of Certain Beneficial Owner and Management and Related Stockholder Matters

The information required by this Item will be set forth in the section headed “Security Ownership of Certain Beneficial Owners and Management” in our Proxy Statement and is incorporated in this Annual Report by reference.

Information regarding our equity compensation plans will be set forth in the section headed “Executive Compensation” in our Proxy Statement and is incorporated in this Annual Report by reference.

Item 13. Certain Relationships and Related Party Transactions

The information required by this Item will be set forth in the section headed “Transactions with Related Persons” in our Proxy Statement and is incorporated in this Annual Report by reference.

Item 14. Principal Accounting Fees and Services

The information required by this Item will be set forth in the section headed “—Ratification of Selection of Independent Registered Public Accounting Firm” in our Proxy Statement and is incorporated in this Annual Report by reference.

Part IV**Item 15. Exhibits and financial statements.**

The following documents are filed as part of this Annual Report on Form 10-K:

(a) Consolidated Financial Statements

The consolidated financial statements are filed as part of this Annual Report on Form 10-K under "Item 8. Financial Statements and Supplementary Data."

(b) Financial Statement Schedules

The financial statement schedules are omitted because they are either not applicable or the information required is presented in the financial statements and notes thereto under "Item 8. Financial Statements and Supplementary Data."

(c) Exhibits

The following documents are filed, furnished, or incorporated by reference as part of this Annual Report on Form 10-K.

EXHIBIT NO.	DESCRIPTION OF EXHIBIT	Form	Exhibit	Filing Date	FILED HEREWITH
3.1	Amended and Restated Certificate of Incorporation of Arteris, Inc.	8-K	3.1	10-29-2021	
3.2	Amended and Restated Bylaws of Arteris, Inc.	8-K	3.2	10-29-2021	
4.1	Specimen Stock Certificate evidencing the shares of common stock.	S-1/A	4.1	10-18-2021	
10.1	Investors' Rights Agreement, dated February 5, 2016, by and among Arteris, Inc. and the investors listed therein.	S-1	10.1	10-01-2021	
10.2	Amended and Restated Business Financing Agreement, by and between Arteris, Inc. and Western Alliance Bank dated as of December 16, 2020.	S-1	10.2	10-01-2021	
10.3†	License Agreement, dated as of October 11, 2013, by and between Arteris, Inc. and Qualcomm Technologies, Inc.	S-1	10.3	10-01-2021	
10.4†	Asset Purchase Agreement, dated as of October 9, 2013, by and among Qualcomm Technologies, Inc., Qualcomm France SARL, Arteris Holdings, Inc., Arteris, Inc. and Arteris, SAS	S-1	10.4	10-01-2021	
10.5	Office Lease, by and between Millich Commercial, LLC and Arteris, Inc., dated as of July 17, 2017.	S-1	10.5	10-01-2021	
10.6#	Employment Agreement, by and between Arteris, Inc. and K. Charles Janac.	S-1	10.6	10-01-2021	
10.7#	Employment Agreement, by and between Arteris IP SAS and Isabelle Geday.	S-1	10.1	10-01-2021	
10.8#	Arteris, Inc. 2016 Equity Incentive Plan and related form agreements, as amended.	S-8	99.1(a)	11-01-2021	
10.9#	Arteris, Inc. 2016 Equity Incentive Plan for the Grant of Restricted Stock Unit Awards to Employees in France.	S-1	10.12	10-01-2021	
10.10#	2021 Incentive Award Plan.	S-8	99.2(a)	11-01-2021	
10.11#	Form of Stock Option Award Agreement under Arteris, Inc. 2021 Incentive Award Plan.	S-1/A	10.14	10-18-2021	
10.12#	Form of Restricted Stock Unit Award Agreement under Arteris, Inc. 2021 Incentive Award Plan	S-1/A	10.15	10-18-2021	
10.13#	2021 Employee Stock Purchase Plan	S-8	99.3	11-01-2021	
10.14#	Form of Executive Change in Control Severance Agreement	S-1/A	10.17	10-18-2021	
10.15#	Arteris, Inc. Non-Employee Director Compensation Policy.	S-1/A	10.18	10-18-2021	
10.16#	Form of Indemnification Agreement between Arteris, Inc. and its directors and officers.	S-1/A	10.19	10-18-2021	

[Table of Contents](#)

EXHIBIT NO.	DESCRIPTION OF EXHIBIT	Form	Exhibit	Filing Date	FILED HEREWITH
10.17#	Amended and Restated Project Assignment 1 to Independent Contractor Services Agreement	8-K	10.1	12-10-2021	
10.18#	Contractor's Assignment of Independent Contractor Services Agreement as Amended, from Isabelle Geday to Magillem Design Services S.A., effective as of January 10, 2022	10-K	10.21	03-07-2022	
10.19	Transchip Share Purchase and Shareholders Agreement, dated February 21, 2022	10-Q	10.1	05-10-2022	
10.20	Transchip Share Purchase and Shareholders Agreement, dated September 15, 2022	10-Q	10.1	11-08-2022	
10.21	2022 Employment Inducement Award Plan	10-Q	10.2	11-08-2022	
10.22	Form of Stock Option Grant Notice and Stock Option Agreement under the 2022 Employment Inducement Award Plan	10-Q	10.3	11-08-2022	
10.23	Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement under the 2022 Employment Inducement Award Plan	10-Q	10.4	11-08-2022	
10.24	Open Market Sales Agreement, dated as of November 8, 2022, between Arteris, Inc. and Jefferies LLC	S-3	1.2	11-09-2022	
21.1	Subsidiaries of Arteris, Inc.				X
23.1	Consent of Moss Adams LLP.				X
24.1	Power of Attorney (included on signature page).				X
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
32.1*	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
32.2*	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.				X
101.SCH	XBRL Taxonomy Extension Schema Document.				X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.				X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.				X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.				X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.				X
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibits 101).				X

* The certifications attached as Exhibits 32.1 and 32.2 that accompany this Annual Report on Form 10-K, are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Arteris, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

Indicates a management contract or compensatory plan or arrangement.

† Portions of this exhibit (indicated by asterisks) have been omitted pursuant to Item 601(b)(10)(iv) of Regulation S-K under the Securities Act of 1933, as amended, because they are both (i) not material and (ii) the type of information that the registrant both customarily and actually treats as private and confidential.

Item 16. Form 10-K Summary

None.

Subsidiaries of Arteris, Inc.**Legal Name of Subsidiary**

Arteris Semiconductor Technology (Nanjing) Co., Ltd.
Arteris IP Korea Limited
Arteris K.K.
Arteris IP SAS
Arteris HK Limited
Sauternes Merger Sub II, LLC

Jurisdiction of Organization

People's Republic of China
Korea
Japan
France
Hong Kong
Delaware

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-268257) and Form S-8 (Nos. 333-260620; 333-263352; 333-268258) of Arteris, Inc. of our report dated February 28, 2023, relating to the consolidated financial statements of Arteris, Inc. which appears in this Annual Report Form 10-K for the year ended December 31, 2022.

/s/ Moss Adams LLP

San Francisco, California
February 28, 2023

**CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, K. Charles Janac, certify that:

1. I have reviewed this Annual Report on Form 10-K of Arteris, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-14(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2023

By:

/s/ K. Charles Janac

K. Charles Janac
President and Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Nicholas B. Hawkins, certify that:

1. I have reviewed this Annual Report on Form 10-K of Arteris, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-14(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2023

By:

/s/ Nicholas B. Hawkins

Nicholas B. Hawkins

Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

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

In connection with the Annual Report of Arteris, Inc. (the "Company") on Form 10-K for the period ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 28, 2023

By: _____
/s/ K. Charles Janac
K. Charles Janac
President and Chief Executive Officer
(Principal Executive Officer)

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

In connection with the Annual Report of Arteris, Inc. (the "Company") on Form 10-K for the period ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 28, 2023

By: _____
/s/ Nicholas B. Hawkins
Nicholas B. Hawkins
Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)