



2023 Annual Report

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

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2023

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

Commission File No. 000-25826

HARMONIC INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

77-0201147
(I.R.S. Employer
Identification No.)

**2590 Orchard Parkway
San Jose, CA 95131
(408) 542-2500**

(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:

<u>Title of each class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$0.001 per share	HLIT	The NASDAQ Global Select Market

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

None

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

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

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

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

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

Large accelerated filer ☒
Non-accelerated filer ☐
Emerging growth company ☐

Accelerated filer ☐
Smaller reporting company ☐

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

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

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

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

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

Based on the reported closing sale price of the Common Stock on The NASDAQ Global Select Market on June 30, 2023, the aggregate market value of the voting Common Stock held by non-affiliates of the registrant was approximately \$1,259.4 million. Shares of Common Stock held by each executive officer and director and by each person who owns 5% or more of the outstanding Common Stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 12, 2024, there were 111,908,849 shares of the Registrant's Common Stock, \$0.001 par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the Registrant's 2024 Annual Meeting of Stockholders (which will be filed with the Securities and Exchange Commission within 120 days of the end of the fiscal year ended December 31, 2023) are incorporated by reference in Part III of this Annual Report on Form 10-K.

HARMONIC INC.
FORM 10-K
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Forward Looking Statements

Some of the statements contained in this Annual Report on Form 10-K are forward-looking statements that involve risk and uncertainties. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), including, without limitation, statements regarding our expectations, beliefs, intentions or strategies regarding the future. In some cases, you can identify forward-looking statements by terminology such as, “may,” “will,” “should,” “expects,” “plans,” “anticipates,” “could,” “believes,” “intends,” “estimates,” “predicts,” “potential,” or “continue” or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements regarding:

- developing trends and demands in the markets we address, particularly emerging markets;
- macroeconomic conditions, including inflation, rising interest rates, volatility and uncertainty in the banking and financial services sector, supply chain disruptions, volatile capital markets and foreign currency fluctuations, particularly in certain geographies, and in financial markets;
- the impact of geopolitical events, including the Hamas-Israel and Russia-Ukraine conflicts, and tensions between China and Taiwan and China and the U.S., on our business and the markets in which we operate;
- new and future products and services;
- spending of our customers;
- our strategic direction, future business plans and growth strategy, including our plans with respect to the Video Business;
- industry and customer consolidation;
- expected demand for and benefits of our products and services;
- concentration of revenue sources;
- expectations regarding our Broadband and Video solutions;
- potential future acquisitions and dispositions;
- anticipated results of potential or actual litigation;
- our competitive environment;
- the impact of our restructuring plans;
- the impact of governmental regulations, including with respect to tariffs and economic sanctions;
- anticipated revenue and expenses, including the sources of such revenue and expenses;
- expected impacts of changes in accounting rules;
- expectations regarding the usability of our inventory and the risk that inventory will exceed forecasted demand;
- expectations and estimates related to goodwill and its associated carrying value; and
- use of cash, cash needs and ability to raise capital, including repaying our convertible notes or repurchasing our common stock.

These statements are subject to known and unknown risks, uncertainties and other factors, any of which may cause our actual results to differ materially from those implied by the forward-looking statements. Important factors that may cause actual results to differ from expectations include those discussed in “Risk Factors” in this Annual Report on Form 10-K. All forward-looking statements included in this Annual Report on Form 10-K are based on information available to us on the date thereof, and we assume no obligation to update any such forward-looking statements. The terms “Harmonic,” “Company,” “we,” “us,” “its,” and “our,” as used in this Annual Report on Form 10-K, refer to Harmonic Inc. and its subsidiaries and its predecessors as a combined entity, except where the context requires otherwise.

Risk Factor Summary

Our business is subject to significant risks and uncertainties that make an investment in us speculative and risky. Below we summarize what we believe are the principal risk factors but these risks are not the only ones we face, and you should carefully review and consider the full discussion of our risk factors in the section titled “Risk Factors,” together with the other information in this Annual Report on Form 10-K. If any of the following risks actually occurs (or if any of those listed elsewhere in this Annual Report on Form 10-K occur), our business, reputation, financial condition, results of operations, revenue, and future prospects could be seriously harmed. In that event, the market price of our common stock could decline, and you could lose part or all of your investment. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business.

- We depend on cable, satellite and telco and broadcast and media industry spending for our revenue and any material decrease or delay in spending in any of these industries would negatively impact our operating results, financial condition and cash flows;
- The loss of one or more of our key customers, a failure to continue diversifying our customer base, or a decrease in the number of larger transactions could harm our business and our operating results;
- We need to develop and introduce new and enhanced products and solutions in a timely manner to meet the needs of our customers and to remain competitive;
- The markets in which we operate are intensely competitive;
- Our future growth depends on a number of video and broadband industry trends;
- Our software-based broadband product initiatives expose us to certain technology transition risks that may adversely impact our operating results, financial condition and cash flows;
- Our operating results are likely to fluctuate significantly and, as a result, may fail to meet or exceed the expectations of securities analysts or investors, causing our stock price to decline;
- We purchase several key components, subassemblies and modules used in the manufacture or integration of our products from sole or limited sources, and we rely on contract manufacturers and other subcontractors;
- We face risks associated with having outsourced engineering resources located in Ukraine; and
- We rely on resellers, value-added resellers and systems integrators for a significant portion of our revenue, and disruptions to, or our failure to develop and manage our relationships with these customers or the processes and procedures that support them could adversely affect our business.

PART I

Item 1. **BUSINESS**

We are a leading global provider of (i) broadband access solutions that enable broadband operators to more efficiently and effectively deploy high-speed internet for data, voice and video services for their customers and (ii) versatile and high performance video delivery software, products, system solutions and services that enable our customers to efficiently create, prepare, store, playout and deliver a full range of high-quality broadcast and streaming video services to consumer devices, including televisions, personal computers, laptops, tablets and smart phones.

We operate in two segments, Broadband and Video. Our Broadband business provides broadband access solutions and related services, including our cOS software-based broadband access solution, to broadband operators globally. Our Video business provides video processing and production and playout solutions and services worldwide to broadband operators and satellite and telco Pay-TV service providers, which we refer to collectively as “service providers,” and to broadcast and media companies, including streaming media companies. Our Video business infrastructure solutions are delivered either through shipment of our products, software licenses or as software-as-a-service (“SaaS”) subscriptions.

Across our two business segments, we derived approximately 74% of our revenue from the Americas in 2023. The Europe, Middle East and Africa (EMEA) and Asia Pacific (APAC) regions accounted for 21% and 5% of our 2023 revenue, respectively.

Harmonic was initially incorporated in California in June 1988 and was reincorporated in Delaware in May 1995. Our principal executive offices are currently located at 2590 Orchard Parkway, San Jose, California 95131. Our telephone number is (408) 542-2500. Our Internet website is <http://www.harmonicinc.com>. Other than the information expressly set forth in this Annual Report on Form 10-K, the information contained or referred to on our website is not part of this report.

Industry Overview and Market Trends

Broadband Business

Industry Challenges

Broadband operators continue to face challenges from the rapid growth of demand for broadband bandwidth in their networks, driven primarily by:

- more users with more connected devices and applications;
- bundled digital video, voice and high-speed data services; and
- bandwidth-intensive VOD and streaming video services, and interactive cloud applications.

In addition, the operation of network infrastructure is space, power and personnel intensive. Hardware-centric networks can also be expensive to update or replace. To remain competitive, especially in the face of heightened competition from non-cable service providers, such as telcos, to deliver gigabit data rates, broadband operators need to significantly upgrade existing equipment and network technologies.

Technology Trends

- *DOCSIS*. We believe the cable industry will continue to deploy the DOCSIS 3.1 standard, which enables high bandwidth data transfer over existing broadband infrastructure, and we expect increasing adoption and deployment of the next-generation DOCSIS 4.0 standard, which has begun in certain markets.
- *Virtualization*. We believe broadband operators will continue to move toward more software-driven architectures, which is central to our Broadband business and product strategy. Virtualized software solutions that are decoupled from underlying hardware and run on commercial-off-the-shelf (COTS) servers and/or cloud-native architectures allow for significantly increased efficiencies, upgradability, configuration flexibility, service agility and scalability not feasible with hardware-centric approaches. We believe a software-based broadband access solution can significantly reduce broadband operator facility costs, especially costs related to physical space and power consumption, and increase operational efficiency, and that the deployment of these systems will be an important step in broadband operators’ transition to all-IP networks.

- *Distributed Access Architecture.* In addition to centralized broadband access solutions, we believe interest in distributed access solutions continues to accelerate, particularly in competitive gigabit service markets where broadband operators are competing with fiber-to-the-home (FTTH) services and are extending fiber networks deeper into their access networks. A distributed access architecture (DAA) coupled with a software-based broadband access solution running on COTS servers at a headend, and the distribution of DAA nodes closer to end users, alleviates the power and space requirements of centralized systems at headend sites due to the fact that the radio frequency (RF) processing is distributed into the field outside of the headend. We believe this distributed architecture will enable service providers to efficiently scale to support data and IP video growth.
- *Multiple Access.* cOS is a software-based solution that runs on COTS servers connected to distributed access nodes. Traditionally, the distributed access nodes deliver service to the subscribers over RF signals with DOCSIS. With cOS, FTTH services over passive optical networks (PON) can be supported with software running on cOS servers and with remote optical line termination (OLT) modules plugged into the DAA nodes. The result is that the cOS solution can support delivering both DOCSIS and PON services to different subscribers, which we believe is another key differentiating competitive advantage for Harmonic. As fiber is pulled deeper into the network, broadband operators will have the infrastructure and technology to deliver both traditional cable services and FTTH.

Our Broadband business strategy is focused on providing our customers with software-based solutions, on a centralized, distributed access or hybrid architecture, to enable and support these technology and industry trends.

Video Business

We believe our customers must continue to employ innovative technologies and services to address key trends in the dynamic video industry.

- *Demand for Streaming Services.* In the highly competitive video industry, there is strong demand for video content to be captured, processed and streamed to millions of subscribers at scale, and with personalized service features and characteristics. We believe video streaming is, and will continue to be, the most significant trend affecting the video industry for the foreseeable future.
- *Demand for Targeted Advertising.* Streaming technology makes it possible for streaming platforms to insert personalized targeted advertisements into video streams to consumers. This capability is highly sought after by advertisers and results in significantly higher advertising revenue for video streaming service providers. With streaming viewership continuing to grow rapidly, we believe targeted ad insertion will become a foundational pillar of the video industry in the coming years.
- *Streaming of Live Events.* In contrast to the constraints of traditional linear broadcast channels, there is effectively no limit to the number of live events that can be streamed or the audience reach of streamed events. Consequently, we believe the number of live events globally that will be streamed to consumers, especially live sporting events, will continue to grow for the foreseeable future.
- *Demand for High Quality Video.* High quality video for both traditional broadcast television and streaming continues to be an important factor for consumers. Compression technologies such as High Efficiency Video Compression (HEVC) or advances in H.264/AVC codecs, as well as increasing requirements for HDR encoding, will continue to remain a high priority for both broadcast and streaming providers.
- *Decline in Broadcast Viewing.* Broadcast television viewership will continue to decline as the growth in streaming accelerates. We believe this transition will cause traditional Pay-TV service providers and broadcasters to focus their investments on (i) providing streaming services and (ii) reducing the operational complexities and cost of broadcast television.

In response to these trends, our customers are:

- expanding their streaming offerings with video-on-demand (VOD) programming, live events and/or linear TV bundles to reach a larger and more global audience;

- utilizing streaming technologies to expand monetization opportunities with personalized and targeted ad insertion;
- continuing to enhance and differentiate their content offerings, consolidate to achieve greater economies of scale and subscriber concentration, and acquire other companies to expand their content libraries and capabilities to develop original content; and
- improving the efficiency and utilization of legacy infrastructure to minimize operational and staffing needs and costs by migrating services to public cloud SaaS or upgrading on-premise equipment with the latest generation of highly dense and functionally rich technologies.

Our Video business strategy is focused on providing our customers with software-based appliances and SaaS platforms to enable and support these trends.

Our Video Markets

Broadcast and Media Companies

- Network broadcasters, programmers and content owners continue to invest in new and enhanced direct-to-consumer streaming platforms, as well as upgrade and improve the efficiencies of their traditional broadcast television services. We believe these companies will utilize new technologies, including public cloud infrastructure and SaaS platforms, to expand their streaming offerings, reach wider audiences, and increase monetization opportunities through personalized advertising, and, in parallel, reduce the complexity and cost of running and operating their traditional broadcast services.

Streaming

- We believe media companies of all sizes will invest heavily in streaming services for the foreseeable future, whether for linear TV, live events or a range of VOD offerings, and that these offerings will be enhanced to include personal and targeted advertisements to increase monetization potential. We believe many of these streaming offerings will be launched by new entrants into the space, in addition to those launched by traditional media companies who have a history and brand in broadcast television.

Service Providers

- *Wireline Operators.* Cable and telco operators continue to focus on various initiatives to improve and differentiate their service offerings from competing service providers, including bundled digital video, voice and high-speed data services; expansion of streaming service offerings to include linear TV, live events and VOD; upgraded consumer-facing applications; and capacity enhancement of high-speed data services.
- *Satellite Operators.* Satellite operators around the world have established digital television services that serve tens of millions of subscribers, with the ability to provide tens of thousands of linear channels. We expect satellite operators to increase their investments in their streaming offerings to meet rapidly changing consumption habits and, in parallel, strive to optimize their traditional broadcast operations.

Video Infrastructure Technology Trends

- *Acceleration of Streaming Services.* We believe the industry will continue to adopt streaming technologies at an accelerating pace to deliver video content to consumers and, increasingly, utilize public clouds to do so.
- *Transformation of Broadcast Infrastructure.* We believe the industry will continue to seek to transform existing broadcast infrastructure workflows into more flexible and efficient operations, in order to reduce operational and investment costs. We believe that, in order to maximize cost savings, a material portion of these operations will migrate to public clouds in the coming years, while some customers will upgrade and replace their aging on-premise equipment with next-generation software-based appliances that significantly reduce operational complexity.

Our Products and Solutions

Broadband Products and Solutions

Software-Based Broadband Access Solution. As demand continues to rapidly grow for high-speed broadband services such as streaming, VOD, time-shift TV and cloud DVR, we believe we can help broadband operators take advantage of this opportunity with our cOS software-based broadband access solution, an end-to-end solution consisting of virtualized cloud-native software elements that orchestrate and connect with a variety of Harmonic and third-party indoor and outdoor hardware devices. We believe our cOS solution delivers unprecedented scalability, agility and cost savings, and enables our customers to migrate to multi-gigabit broadband capacity and the fast deployment of DOCSIS and FTTx data, video and voice services. We believe our solution resolves space and power constraints in broadband operator facilities, significantly reduces dependence on hardware upgrade cycles, and reduces total cost of ownership. Our cOS solution can be deployed based on a centralized, distributed access or hybrid architecture.

cOS Central Cloud Services. Our cOS Central Cloud Services is a value-add subscription service for cOS customers that bundles three elements: (i) 24x7 technical support, (ii) a dedicated customer success team focused on customer satisfaction and retention, and (iii) a cOS Central SaaS that enhances and simplifies the deployment, monitoring, operation and maintenance of the cOS solution with advanced analytics, management and engagement tools.

Video Processing and Delivery Solutions

We offer two categories of solutions - a broad range of software-based video appliances and SaaS platforms - to deliver broadcast and streaming services and capabilities in the media market.

Software-based Appliances. Our video processing appliances, which include network management and application software and hardware products, provide our customers with the ability to acquire a variety of signals from different sources and in different protocols in order to deliver a variety of real-time and stored content to their subscribers for viewing on a broad range of devices. Our appliance product families include:

- *Encoders.* Our high-performance encoders compress video, audio and data channels to low bit rates while maintaining high video quality. Our latest software-based XOS encoders can deliver video in multiple formats, including standard, HD and Ultra HD, and in any video compression standard, including MPEG-2, MPEG-4 AVC and HEVC. This capability allows the encoders to converge workflows targeted for all forms of video delivery, whether broadcast or streaming.
- *Video Servers.* Our Spectrum family of video server systems are used by broadcast and media companies to create play-to-air television channels. Our customers typically use these video server products to record incoming content from either live feeds or from tapes, encoding that content in real-time into standard media files that are then stored in the server's file system until the content is needed for playback as part of a scheduled playlist.
- *High-density stream processing.* We offer high-density, real-time stream processing systems capable of high-performance, high-throughput video processing for mission-critical IP video delivery applications, including multiplexing, scrambling, splicing and blackout source switching.
- *Edge processors.* Our family of Edge processing platforms allows service providers to acquire content delivered via satellite, IP or terrestrial networks for distribution to their subscribers. These products are used by broadcasters to decode signals backhauled from live news and sporting events in contribution applications, as well as by content owners looking to distribute their content in a controlled manner to a large base of affiliates.

SaaS platforms. Our VOS360 SaaS platforms provide both streaming and channel origination and distribution services in a public cloud environment that is fully managed and operated by our 24/7 DevOps teams. Our SaaS solutions enable the packaging and delivery of high-quality streaming services, including live streaming, VOD, catch-up TV, start-over TV, network-DVR and cloud-DVR services through HTTP streaming to any device, along with dynamic and personal ad insertion. In addition, our VOS360 SaaS platforms enable the transformation of traditional broadcast video workflows into cloud-based workflows, resulting in more efficient and leaner operations for our customers. We continue to see an increasing number of customers seeking to leverage the inherent commercial, operational and infrastructure flexibility offered by our VOS360 SaaS platforms. We also provide an on-premise SaaS offering with our VOS cloud-native software solution for customers seeking to deploy a cloud-like architecture in a private data center.

Technical Support and Professional Services

We provide maintenance and support services to most of our customers under service level agreements that are generally renewed on an annual basis. We also provide consulting, implementation and integration services to our customers worldwide. We draw upon our expertise in broadcast television, communications networking, compression technology and broadband access technologies to design, integrate and install complete solutions for our customers, including integration with third-party products and services. We offer a broad range of services, including SaaS-related support and deployment, program management, technical design and planning, building and site preparation, integration and equipment installation, end-to-end system testing and comprehensive training.

Customers

We sell our products to a variety of cable, satellite and telco, and broadcast and media companies. Set forth below is a representative list of our significant end user and integrator/reseller customers, listed alphabetically, based, in part, on revenue during 2023.

<u>United States</u>	<u>International</u>
Apple Inc	America Movil
Cable One Inc	Comcast
Charter Communications	Deutsche Telekom
Comcast	Eurasiatrans B&PE
Cox Communications	Groupe Canal
DirecTV	Millicom International
Dish Network	Normann Engineering
Heartland Video Systems	NYL Eletronica
SES	Tele2 Sverige AB
Sinclair Broadcast Group	Vodafone

Sales to our 10 largest customers in 2023, 2022 and 2021 accounted for approximately 66%, 67% and 58% of our net revenue, respectively. Although we continue to seek to broaden our customer base by penetrating new markets and further expanding internationally, we expect to see continuing industry consolidation and customer concentration.

During 2023, 2022 and 2021, Comcast accounted for 44%, 39% and 26% of our net revenue, respectively. The loss of any significant customer, or any material reduction in orders from any significant customer, or our failure to qualify our new products with any significant customer could materially and adversely affect our operating results, financial condition and cash flows. In addition, we are involved in most quarters in one or more relatively large individual transactions. A decrease in the number of relatively larger individual transactions in which we are involved in any quarter could adversely affect our operating results for that quarter.

Sales and Marketing

In the United States and internationally, we sell our products through our own direct sales force, as well as through independent resellers and systems integrators. Our direct sales team is organized by business segment, and geographically and by major customers and markets to support customer requirements. Our principal sales offices outside of the United States are located in Europe and Asia, and we have support staff in Switzerland and France to support our international customers and operations. Our international resellers are generally responsible for importing our products and providing certain installation, technical support and other services to customers in their territory after receiving training from us.

Our direct sales force and resellers for each business segment are supported by highly trained technical staff, which includes application engineers who work closely with our customers to develop technical proposals and design systems to optimize system performance and economic benefits for our customers. Our technical support teams provide a customized set of services, as required, for ongoing maintenance, support-on-demand and training for our customers and resellers, both in our facilities and on-site.

Our product management organization for each business segment develops strategies for product lines and markets and, in conjunction with our sales force, identifies the evolving technical and application needs of customers so that our product development resources can be most effectively and efficiently deployed to meet anticipated product requirements. Each product management organization is also responsible for setting price levels, demand forecasting and general support of the sales force, particularly at major accounts.

Our corporate marketing organization is responsible for building awareness of the Harmonic brand in our markets and driving engagement with our strategies, solutions and products. The group develops all of our corporate messaging and manages all customer and industry communication channels, including public relations, web and social media, events and trade shows, as well as demand generation marketing campaigns in conjunction with our sales force.

Manufacturing and Suppliers

We rely on third-party contract manufacturers to assemble our products and the subassemblies and modules for our products. In 2003, we entered into an agreement with Plexus Services Corp. (“Plexus”) to act as our primary contract manufacturer. Plexus accounts for the majority of the products we purchase from our contract manufacturers. This agreement has automatic annual renewals, unless prior notice for nonrenewal is given, and has been automatically renewed for a term expiring in October 2024. We do not generally maintain long-term agreements with any of our contract manufacturers.

Many components, subassemblies and modules necessary for the manufacture or integration of our products are obtained from a sole supplier or a limited group of suppliers. While we expend considerable efforts to qualify additional component sources, consolidation of suppliers in the industry and the small number of viable alternatives have limited the results of these efforts. We do not generally maintain long-term agreements with any of our suppliers.

Intellectual Property

As of December 31, 2023, we held 133 issued U.S. patents and 47 issued foreign patents and had 39 patent applications pending. Our issued patents are scheduled to expire between 2024 and 2041. Although we attempt to protect our intellectual property rights through patents, trademarks, copyrights, licensing arrangements, maintaining certain technology as trade secrets and other measures, we cannot assure you that any patent, trademark, copyright or other intellectual property rights owned by us will not be invalidated, circumvented or challenged, that such intellectual property rights will provide competitive advantages to us, or that any of our pending or future patent applications will be issued with the claims, or the scope of the claims, sought by us, if at all. We cannot assure you that others will not develop technologies that are similar or superior to our technology, duplicate our technology or design around the patents that we own. In addition, effective patent, copyright and trade secret protection may be unavailable or limited in which we do business or may do business in the future.

We enter into confidentiality or license agreements with our employees, consultants, vendors and customers as needed, and generally limit access to, and distribution of, our proprietary information. However, no assurances can be given that these actions will prevent misappropriation of our technology. In addition, if necessary, we are prepared to take legal action, in the future, to enforce our patents and other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement or invalidity. Any such litigation could result in substantial costs and diversion of resources, including management time, and could negatively affect our business, operating results, financial position and cash flows.

In order to successfully develop and market our products, we may be required to enter into technology development or licensing agreements with third parties. Although many companies are often willing to enter into such technology development or licensing agreements, we cannot assure you that such agreements can be negotiated on reasonable terms or at all. The failure to enter into technology development or licensing agreements, when necessary, could limit our ability to develop and market new products and could harm our business.

Backlog

We schedule production of our products and solutions based upon our backlog, open contracts, informal commitments from customers and sales projections. Our backlog consists of unfilled firm purchase orders and contracts by our customers which have not been completed. Approximately 51% of our backlog and deferred revenue is projected to be converted to revenue within a rolling one-year period. As of December 31, 2023 and 2022, we had backlog, including deferred revenue, of \$653.2 million and \$457.1 million, respectively. Delivery schedules on such orders may be deferred or canceled for a number of reasons, including reductions in spending by our customers or changes in specific customer requirements. In addition, due to annual budget cycles at many of our customers, the amount of our backlog at any given time is not necessarily indicative of actual revenues for any succeeding period.

Competition

The markets in which our Video and Broadband businesses operate are extremely competitive and have been characterized by rapid technological change and declining average selling prices in the past. The principal competitive factors in these markets include product performance, functionality and features, reliability, pricing, breadth of product offerings, brand recognition and awareness, sales and distribution capabilities, technical operations, support and services, and customer relationships with our customers. We believe that we compete favorably in each of these categories.

Our competitors in our Broadband business include a number of suppliers of networking and communications equipment and solutions to broadband service providers.

Our competitors in our Video appliance business are primarily comprised of providers of video delivery and video processing and compression products and solutions, broadcast equipment and solutions providers, and certain network infrastructure providers. Our competitors in our Video SaaS business include companies that offer video delivery and processing SaaS solutions, SaaS video streaming platform providers, and certain public cloud service providers.

Research and Development

We have historically devoted a significant amount of our resources to research and development. Research and development expenses in 2023, 2022 and 2021 were approximately \$126.3 million, \$120.3 million and \$102.2 million, respectively. Research and development expenses as a percentage of revenue in 2023, 2022 and 2021 were approximately 21%, 19% and 20%, respectively. Our internal research and development activities are conducted primarily in the United States (California, Oregon and New Jersey), France, Israel and Hong Kong. In addition, a portion of our research and development is conducted through third-party partners with engineering resources in Ukraine and India.

Our research and development program is primarily focused on developing new products and solutions, and adding new features and other improvements to existing products and solutions. With respect to our Broadband business segment, our major research and development efforts are focused on broadband access solutions for both video and data, particularly the ongoing development of our centralized, distributed and hybrid cOS software-based broadband access solutions and converging fiber and DOCSIS capabilities on our cOS solution platform. For our Video business segment, our current research and development efforts are focused on enhancing our streaming capabilities, expanding our targeted advertising technologies, and improving the efficiency and flexibility of broadcast workflows for our traditional appliances and within our SaaS platform.

Our success in designing, developing, manufacturing and selling new or enhanced products and solutions will depend on a variety of factors, including the identification of market demand for new products and solutions, product selection, timely product design and development, product performance, effective manufacturing and assembly processes, and sales and marketing. Because of the complexity inherent in such research and development efforts, we cannot assure you that we will successfully develop new products and solutions, or that new products and solutions developed by us will achieve market acceptance. Our failure to successfully develop and introduce new products and solutions would materially and adversely affect our business, operating results, financial condition and cash flows.

Human Capital Resources

As of December 31, 2023, we employed a total of 1,359 full time employees, including 570 in research and development, 238 in sales, 267 in service and support, 81 in operations, 67 in marketing (corporate and product) and 136 in a general and administrative capacity. Of those employees, 450 were located in the United States and Canada, and 909 employees were located outside of North America in 22 countries in Central and South America, the Middle East and Africa, Europe and the Asia Pacific region. From time to time, we also employ a number of temporary employees and consultants on a contract basis. Our employees in each of France and Spain are represented by labor unions and an employee works council. None of our other employees are represented by a labor union with respect to their employment with us. We have not experienced any work stoppages, and we consider our relations with our employees to be good.

Competition for qualified personnel in the technology space is intense, and we believe that our future success largely depends upon our continued ability to attract, develop and retain highly skilled individuals across the globe. We believe we offer competitive compensation (including salary, incentive bonus and equity awards) and comprehensive benefits packages in each of our locations around the globe. We aim to create an environment in which our employees can develop and grow, and be recognized for their achievements. We offer training, development and on-demand learning programs to support continuous learning and cultivate talent throughout the company, and promote opportunities for internal mobility and recruitment across functions and geographies. We offer rewards and recognition programs, including spot awards to recognize employee contributions, patent incentive awards, and various functional recognition awards. We regularly conduct employee surveys to gauge employee engagement and satisfaction, and we use the views expressed in the surveys to influence our people strategy and policies.

As a global company, much of our success is rooted in the diversity of our teams and our commitment to inclusion, where all employees are respected regardless of gender, race, color, national origin, ancestry, citizenship, religion, age, physical or mental disability, medical condition, genetic information, pregnancy, sexual orientation, gender identity or gender expression, veteran status, or marital status. We are focused on understanding our diversity, equity and inclusion (DEI) opportunities and executing on a strategy to support further progress. We support regional employee-led groups that promote and drive various volunteering initiatives aimed at assisting underrepresented and disadvantaged populations in the communities where we operate, as well as internal awareness and educational campaigns on DEI-related topics. We continue to focus on building a pipeline for talent to create more opportunities for workplace gender and other diversity and to support greater representation within the company.

Available Information

Our website is located at www.harmonicinc.com, and our investor relations website is located at investor.harmonicinc.com. Copies of the Company's Annual Report 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 are available free of charge on our investor relations website as soon as reasonably practicable after we file such material electronically with or furnish it to the Securities and Exchange Commission (the SEC). The SEC also maintains a website that contains our SEC filings at www.sec.gov.

We announce material information to the public about us, our products and services and other matters through a variety of means, including filings with the SEC, press releases, public conference calls, webcasts, and our investor relations web site (investor.harmonicinc.com) in order to achieve broad, non-exclusionary distribution of information to the public and for complying with our disclosure obligations under Regulation FD. Except as expressly set forth in this Annual Report on Form 10-K, the contents of our web site are not incorporated by reference into, or otherwise to be regarded as part of, this report or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

Item 1A. RISK FACTORS

Risks Related to Our Business and Our Industry

We depend on cable, satellite and telco, and broadcast and media industry spending for our revenue and any material decrease or delay in spending in any of these industries would negatively impact our operating results, financial condition and cash flows.

Our revenue has been derived from worldwide sales to service providers and broadcast and media companies, and streaming media companies. We expect that these markets will provide our revenue for the foreseeable future. Demand for our products and solutions will depend on the magnitude and timing of spending by customers in each of these markets for the purpose of creating, expanding or upgrading their systems. These spending patterns are dependent on a variety of factors, including:

- the impact of general economic conditions, actual and projected, including inflation, rising interest rates, lower consumer confidence, volatile capital markets, supply chain disruptions, uncertainty and volatility in the financial services sector and the impact of the Hamas-Israel and Russia-Ukraine conflicts, and government and business responses thereto, on the global economy and regional economies;
- access to financing;
- annual budget cycles of customers in each of the industries we serve;
- the impact of industry consolidation;
- customers suspending, reducing or shifting spending due to: (i) new video or broadband industry standards; (ii) industry trends and technology shifts, such as virtualization and cloud-based solutions, and (iii) new products and solutions, such as products and services based on our VOS software platform or our cOS (formerly CableOS) software-based broadband access solutions;
- delayed or reduced near-term spending as customers transition away from video appliance solutions and adopt new business and operating models enabled by software and cloud-based solutions, including SaaS unified video processing solutions;
- federal, state, local and foreign government regulation of broadband, telco, television broadcasting and streaming media;
- overall demand for communication services and consumer acceptance of new video and data technologies and services;
- competitive pressures, including pricing pressures;
- the impact of fluctuations in currency exchange rates, such as the strengthening of the U.S. dollar; and
- discretionary end-user customer spending patterns.

In the past, specific factors contributing to reduced spending have included:

- weak or uncertain economic and financial conditions in the United States or one or more international markets;
- uncertainty related to development of industry technology;
- delays in evaluations of new services, new standards and systems architectures by certain customers;
- emphasis by certain of our customers on generating revenue from existing subscribers or end-customers, rather than from new subscribers or end-customers, through construction, expansion or upgrades;
- a reduction in the amount of capital available to finance projects of our customers and potential customers;
- proposed and completed business combinations and divestitures by our customers and the length of regulatory review of each;
- completion of a new system or significant expansion or upgrade to a system; and
- bankruptcies and financial restructuring of major customers.

In the past, adverse economic conditions in one or more of the geographies in which we offer our products have adversely affected our customers' spending in those geographies and, as a result, our business. During challenging economic times, such as those caused by the Hamas-Israel and Russia-Ukraine conflicts, inflation, currency devaluation, and bank insolvencies and related uncertainty and volatility in the financial services sector and in tight credit markets, many customers have delayed and reduced and may continue to delay or reduce capital expenditures. This has resulted and could continue to result in reductions in revenue from our products, longer sales cycles, difficulties in collection of accounts receivable, slower adoption of new technologies and increased price competition. If global economic and market conditions, or economic conditions in the United States, Europe or other key markets, remain uncertain or deteriorate, we could experience a material and adverse effect on our business, results of operations, financial condition and cash flows. Additionally, since most of our international revenue is denominated in U.S. dollars, global economic and market conditions may impact currency exchange rates and cause our products to become relatively more expensive to customers in a particular country or region, which could lead to delayed or reduced spending in those countries or regions, thereby negatively impacting our business and financial condition.

In addition, industry consolidation has in the past constrained, and may in the future constrain or delay, spending by our customers. Further, if our product portfolio and product development plans do not position us well to capture an increased portion of the spending of customers in the markets on which we focus, our revenue may decline.

As a result of these various factors and potential issues related to customer spending, we may not be able to maintain or increase our revenue in the future, and our operating results, financial condition and cash flows could be materially and adversely affected.

The loss of one or more of our key customers, a failure to continue diversifying our customer base, or a decrease in the number of larger transactions could harm our business and our operating results.

Historically, a significant portion of our revenue has been derived from relatively few customers, due in part to the consolidation of media customers. Sales to our top 10 customers in the fiscal years ended December 31, 2023, 2022 and 2021 accounted for approximately 66%, 67% and 58% of our net revenue, respectively. Although we continue to seek to broaden our customer base by penetrating new markets and further expanding internationally, we expect to see continuing industry consolidation and customer concentration.

During the fiscal years ended December 31, 2023, 2022 and 2021, Comcast accounted for 44%, 39% and 26% of our net revenue respectively. Further consolidation in the cable industry could lead to additional revenue concentration for us. The loss of any significant customer, or any material reduction in orders from any other significant customer, or our failure to qualify our new products with any significant customer could materially and adversely affect, either long term or in a particular quarter, our operating results, financial condition and cash flows. If Comcast or other significant Broadband customers deploy our solutions slower or at a scale that is lower than we anticipate, our operating results, financial condition and cash flows could be materially and adversely effected.

In addition, in most quarters, we are involved in one or more relatively large individual transactions. A decrease in the number of the relatively larger individual transactions in which we are involved in any quarter could materially and adversely affect our operating results for that quarter.

As a result of these and other factors, we may be unable to increase our revenues from some or all of the markets we address, or to do so profitably, and any failure to increase revenues and profits from these customers could materially and adversely affect our operating results, financial condition and cash flows.

We need to develop and introduce new and enhanced products and solutions in a timely manner to meet the needs of our customers and to remain competitive.

All of the markets we address are characterized by continuing technological advancement, changes in customer requirements and evolving industry standards. To compete successfully, we must continually design, develop, manufacture and sell new or enhanced products and solutions that provide increasingly higher levels of performance and reliability and meet our customers' changing needs. However, we may not be successful in those efforts if, among other things, our products and solutions:

- are not cost effective;
- are not brought to market in a timely manner;
- are not in accordance with evolving industry standards;
- fail to meet market acceptance or customer requirements; or
- are ahead of the needs of their markets.

If new standards or some of our new products are adopted later than we predict or not adopted at all, or if adoption occurs earlier than we are able to deliver the applicable products or functionality, we risk spending significant research and development time and dollars on products or features that may never achieve market acceptance or that miss the customer demand window and thus do not produce the revenue that a timely introduction would have likely produced.

If we fail to develop and market new and enhanced products and solutions on a timely basis, our operating results, financial condition and cash flows could be materially and adversely affected.

The markets in which we operate are intensely competitive.

The markets for our products are extremely competitive and have been characterized by rapid technological change and declining average sales prices in the past.

Our competitors in our Broadband business include a number of suppliers of networking and communications equipment and solutions to broadband service providers. Our competitors in our Video appliance business are primarily comprised of providers of video delivery and video processing and compression products and solutions, broadcast equipment and solutions providers, and certain network infrastructure providers. Our competitors in our Video SaaS business include companies that offer video delivery and processing SaaS solutions, SaaS video streaming platform providers, and certain public cloud service providers.

A number of our principal business competitors in both of our business segments are substantially larger and/or may have access to greater financial, technical, marketing or other resources than we have. Consolidation in the Video industry has led to the acquisition of a number of our historic competitors over the last several years by private equity firms and by Amazon Web Services. With respect to our Broadband business, certain competitors are substantially larger than us.

In addition, some of our larger competitors may have more long-standing and established relationships with certain domestic and foreign customers. Many of these large enterprises are in a better position to withstand any significant reduction in spending by customers in our markets and may be better able to navigate periods of market uncertainty, such as the uncertainty caused by the Hamas-Israel and Russia-Ukraine conflicts, bank insolvency and related uncertainty and volatility in the financial services sector and inflation. They often have broader product lines and market focus, and may not be as susceptible to downturns in a particular market. These competitors may also be able to bundle their products together to meet the needs of a particular customer, and may be capable of delivering more complete solutions than we are able to provide. To the extent large enterprises that currently do not compete directly with us choose to enter our markets by acquisition or otherwise, competition would likely intensify.

Further, some of our competitors have offered, and in the future may offer, their products at lower prices than we offer for our competing products or on more attractive financing or payment terms, which has in the past caused, and may in the future cause, us to lose sales opportunities and the resulting revenue or to reduce our prices in response to that competition. Also, some competitors that are smaller than us have engaged in, and may continue to engage in, aggressive price competition in order to gain customer traction and market share. Reductions in prices for any of our products could materially and adversely affect our operating margins and revenue.

Additionally, certain customers and potential customers have developed, and may continue to develop, their own solutions that may cause such customers or potential customers to not consider our product offerings or to displace our installed products with their own solutions. The growing availability of open source codecs and related software, as well as new server chipsets that incorporate encoding technology, has, in certain respects, lowered the barriers to entry for the video processing industry. The development of solutions by potential and existing customers and the reduction of the barriers to entry to enter the video processing industry could result in increased competition and adversely affect our results of operations and business.

If any of our competitors' products or technologies were to become the industry standard, our business could be seriously harmed. If our competitors are successful in bringing their products to market earlier than us, or if these products are more technologically capable than ours, our revenue could be materially and adversely affected.

Our future growth depends on a number of video and broadband industry trends.

Technology, industry and regulatory trends and requirements may affect the growth of our business. These trends and requirements include the following:

- convergence, whereby network operators bundle video, voice and data services to consumers, including mobile delivery options;
- continued strong consumer demand for streaming video services;
- continued adoption of public cloud SaaS platforms to stream video content to consumers, as well as for broadcast infrastructure workflows;

- continued growth in targeted advertising as a key revenue source for video streaming service providers;
- the pace of adoption and deployment of high-bandwidth technology, such as DOCSIS 3.x, DOCSIS 4.0, next generation LTE and FTTP;
- the use of digital video by businesses, governments and educational institutions globally;
- efforts by regulators and governments in the United States and internationally to encourage the adoption of broadband and digital technologies, including 5G broadband networks, as well as to regulate broadband access and delivery;
- the need to develop partnerships with other companies involved in video infrastructure workflow and broadband services;
- the extent and nature of regulatory attitudes towards issues such as network neutrality, competition between operators, access by third parties to networks of other operators, local franchising requirements for telcos to offer video, and other new services, such as mobile video; and
- the outcome of disputes and negotiations between content owners and service providers regarding rights of service providers to store and distribute recorded broadcast content, which outcomes may drive adoption of one technology over another in some cases.

If we fail to recognize and respond to these trends, by timely developing products, features and services required by these trends, we are likely to lose revenue opportunities and our operating results, financial condition and cash flows could be materially and adversely affected.

Our software-based broadband access product initiatives expose us to certain technology transition risks that may adversely impact our operating results, financial condition and cash flows.

We believe our cOS software-based broadband access solutions, supporting centralized, DAA or hybrid configurations, will significantly reduce broadband operator headend costs and increase operational efficiency, and are an important step in operators' transition to all-IP networks. If we are unsuccessful in continuing to innovate, develop, and deploy our broadband access solutions in a timely manner, or are otherwise delayed in making our solutions available to our customers, our business may be adversely impacted, particularly if our competitors develop and market similar or superior products and solutions.

We believe our software-based broadband access solutions will continue to replace and make obsolete current CMTS solutions, which is a market our products have historically not addressed, as well as cable edge-QAM products. If demand for our software-based broadband access solutions is weaker than expected, our near and long-term operating results, financial condition and cash flows could be adversely impacted. Moreover, if competitors adapt new broadband industry technology standards into competing broadband access solutions faster than we do, or promulgate a new or competitive architecture for next-generation broadband access solutions that renders our cOS solution obsolete, our business may be adversely impacted.

The sales cycle for our cOS solutions tends to be long. For broadband operators, upgrading or expanding network infrastructure is complex and expensive, and investing in a cOS solution is a significant strategic decision that may require considerable time to evaluate, test and qualify. Potential customers need to ensure our cOS solution will interoperate with the various components of its existing network infrastructure, including third-party equipment, servers and software. In addition, since we are a relatively new entrant into the CMTS market, we need to demonstrate significant performance, functionality and/or cost advantages with our cOS solutions that outweigh customer switching costs. If sales cycles are significantly longer than anticipated or we are otherwise unsuccessful in growing our cOS sales, our operating results, financial condition and cash flows could be materially and adversely affected.

Our operating results are likely to fluctuate significantly and, as a result, may fail to meet or exceed the expectations of securities analysts or investors, causing our stock price to decline.

Our operating results have fluctuated in the past and are likely to continue to fluctuate in the future, on an annual and a quarterly basis, as a result of several factors, many of which are outside of our control. Some of the factors that may cause these fluctuations include:

- the level and timing of spending of our customers in the United States, Europe and in other markets;
- economic and financial conditions specific to each of the cable, satellite and telco, and broadcast and media industries, as well as general economic and financial market conditions, including the Hamas-Israel and Russia-Ukraine conflicts, tensions between China and Taiwan and China and the United States, bank insolvency and related uncertainty and volatility in the financial services sector, inflation and government and business responses thereto as well as related supply chain and labor shortage issues;

- changes in market acceptance of and demand for our products or our customers' services or products;
- the timing and amount of orders, especially from large individual transactions and transactions with our significant customers;
- the mix of our products sold and the effect it has on gross margins;
- the timing of revenue recognition, including revenue recognition on sales arrangements and from transactions with significant service and support components, which may span several quarters;
- our transition to a SaaS subscription model for our Video business, which may cause near-term declines in revenue in our Video segment since, unlike Video appliance sales, SaaS revenue is recognized over the applicable subscription term based on service usage;
- the timing of completion of our customers' projects;
- the length of each customer product upgrade cycle and the volume of purchases during the cycle;
- competitive market conditions, including pricing actions by our competitors;
- the level and mix of our domestic and international revenue;
- new product introductions by our competitors or by us;
- uncertainty in the European Union due to unrest or violence in Ukraine that the ongoing military conflict with the Russian Federation has caused, which could adversely affect our results, financial condition and prospects;
- uncertainty in the Middle East due to the latest developments in the conflict between Hamas and Israel, which could also adversely affect our results, financial condition and prospects;
- changes in domestic and international regulatory environments affecting our business;
- the evaluation of new services, new standards and system architectures by our customers;
- the cost and timely availability to us of components, subassemblies and modules;
- the mix of our customer base, by industry and size, and sales channels;
- changes in our operating and extraordinary expenses;
- the timing of acquisitions and dispositions by us and the financial impact of such transactions;
- impairment of our goodwill;
- the impact of litigation, such as related litigation expenses and settlement costs;
- write-downs of inventory and investments;
- changes in our effective federal tax rate, including as a result of changes in our valuation allowance against our deferred tax assets, and changes in our effective state tax rates, including as a result of apportionment;
- changes to tax rules related to the deferral of foreign earnings and compliance with foreign tax rules;
- the impact of applicable accounting guidance on accounting for uncertainty in income taxes that requires us to establish reserves for uncertain tax positions and accrue potential tax penalties and interest; and
- the impact of applicable accounting guidance on business combinations that requires us to record charges for certain acquisition related costs and expenses and generally to expense restructuring costs associated with a business combination subsequent to the acquisition date.

The timing of deployment of our products by our customers can be subject to a number of other risks, including the availability of skilled engineering and technical personnel, and the availability of third-party equipment and services. For our Video business, deployment risks may also include our customers' ability to negotiate and enter into rights agreements with video content owners that provide our customers with the right to deliver certain video content, and our customers' need for local franchise and licensing approvals.

We often recognize a substantial portion of our quarterly revenue in the last month of the quarter. We establish our expenditure levels for product development and other operating expenses based on projected revenue levels for a specified period, and expenses are relatively fixed in the short term. Accordingly, even small variations in the timing of revenue, particularly from relatively large individual transactions, can cause significant fluctuations in operating results in a particular quarter.

As a result of these factors and other factors, our operating results in one or more future periods may fail to meet or exceed the expectations of securities analysts or investors. In that event, the trading price of our common stock would likely decline.

We purchase several key components, subassemblies and modules used in the manufacture or integration of our products from sole or limited sources, and we rely on contract manufacturers and other subcontractors.

Our reliance on sole or limited suppliers, particularly foreign suppliers, and our reliance on contractors for manufacturing and installation of our products, involves several risks, including a potential inability to obtain an adequate supply of required components, subassemblies or modules; reduced control over costs, quality and timely delivery of components, subassemblies or modules; supplier discontinuation of components, subassemblies or modules we require; and timely installation of products. In addition, our financial results may be impacted by tariffs imposed by the United States on goods from other countries and tariffs imposed by other countries on U.S. goods. If any such tariffs are imposed on products or components that we import, including those obtained from a sole supplier or a limited group of suppliers, we could experience reduced revenues or may have to raise our prices, either of which could have an adverse effect on our business, financial condition and operating results.

These risks could be heightened during a substantial economic slowdown because our suppliers and subcontractors are more likely to experience adverse changes in their financial condition and operations during such a period. Further, these risks could materially and adversely affect our business if one of our sole sources, or a sole source of one of our suppliers or contract manufacturers, is adversely affected by a natural disaster or the outbreak of disease, epidemics and other pandemics. These risks could also be heightened by geopolitical factors. For example, a number of the components we use in our products are sourced through Taiwan. Deterioration of relations between Taiwan and China and the United States, the resulting actions taken by any of these parties, and other factors affecting the political or economic conditions of Taiwan in the future, could adversely impact our supply chain, international sales and operations. While we expend resources to qualify additional component sources, consolidation of suppliers and the small number of viable alternatives have limited the results of these efforts. Managing our supplier and contractor relationships is particularly difficult during time periods in which we introduce new products and during time periods in which demand for our products is increasing, especially if demand increases more quickly than we expect.

Plexus Services Corp. (“Plexus”), which manufactures our products at its facilities in Malaysia, currently serves as our primary contract manufacturer, and currently accounts for a majority, by dollar amount, of the products that we purchase from our contract manufacturers. From time to time we assess our relationship with our contract manufacturers, and we do not generally maintain long-term agreements with any of our suppliers or contract manufacturers. Our agreement with Plexus has automatic annual renewals, unless prior notice is given by either party, and has been automatically renewed for a term expiring in October 2024.

Difficulties in managing relationships with any of our current contract manufacturers, particularly Plexus, that manufacture our products off-shore, or any of our suppliers of key components, subassemblies and modules used in our products, could impede our ability to meet our customers’ requirements and adversely affect our operating results. An inability to obtain adequate and timely deliveries of our products or any components or materials used in our products, or the inability of any of our contract manufacturers to scale their production to meet demand, or any other circumstance that would require us to seek alternative sources of supply, would negatively affect our ability to ship our products on a timely basis, which could damage relationships with current and prospective customers and harm our business and materially and adversely affect our revenue and other operating results. Furthermore, if we fail to meet customers’ supply expectations, our revenue would be adversely affected and we may lose sales opportunities, both short and long term, which could materially and adversely affect our business and our operating results, financial condition and cash flows. Increases, from time to time, in demand on our suppliers and subcontractors from our customers or from other parties have, on occasion, caused delays in the availability of certain components and products. In response, we may increase our inventories of certain components and products and expedite shipments of our products when necessary. These actions could increase our costs and could also increase our risk of holding obsolete or excess inventory, which, despite our use of a demand order fulfillment model, could materially and adversely affect our business, operating results, financial condition and cash flows.

Operational Risks

We rely on resellers, value-added resellers and systems integrators for a significant portion of our Video business revenue, and disruptions to, or our failure to develop and manage our relationships with these customers or the processes and procedures that support them could adversely affect our business.

We generate a significant percentage of our revenue, particularly in our Video business, through sales to resellers, value-added resellers (“VARs”) and systems integrators that assist us with fulfillment or installation obligations. We expect that these sales will continue to generate a significant percentage of our revenue in the future. Accordingly, our future success is highly dependent upon establishing and maintaining successful relationships with a variety of channel partners.

We generally have no long-term contracts or minimum purchase commitments with any of our resellers, VAR or system integrator customers, and our contracts with these parties do not prohibit them from purchasing or offering products or services that compete with ours. Our competitors may provide incentives to any of our resellers, VAR or systems integrator customers to favor their products or, in effect, to prevent or reduce sales of our products. Any of our resellers, VAR or systems integrator customers may independently choose not to purchase or offer our products. Many of our resellers, and some of our VARs and system integrators are small, are based in a variety of international locations, and may have relatively unsophisticated processes and limited financial resources to conduct their business. Any significant disruption of our sales to these customers, including as a result of the inability or unwillingness of these customers to continue purchasing our products, or their failure to properly manage their business with respect to the purchase of, and payment for, our products, or their ability to comply with our policies and procedures as well as applicable laws, could materially and adversely affect our business, operating results, financial condition and cash flows. In addition, our failure to continue to establish or maintain successful relationships with reseller, VAR and systems integrator customers could likewise materially and adversely affect our business, operating results, financial condition and cash flows.

We face risks associated with having outsourced engineering resources located in Ukraine.

We outsource a portion of our research and development and product support activities to our third-party partner, GlobalLogic, a Hitachi group company. Through GlobalLogic, we have a significant number of engineering resources located in Kyiv, Ukraine that are dedicated to our Broadband and Video business segments. Political, social and economic instability and unrest or violence in Ukraine from the ongoing military conflict with the Russian Federation have caused, and may continue to cause, disruptions to the business and operations of GlobalLogic, which could slow or delay the development work our outsourced engineering teams are undertaking for us. Any escalation of political tensions, military activity, instability, unrest or conflict could limit or prevent our employees from traveling to, from, or within Ukraine to direct and coordinate our outsourced engineering teams, or cause us to shift all or portions of the development work occurring in Ukraine, and/or cause GlobalLogic to relocate personnel to other locations or countries pursuant to its business continuity plans. Any resulting delays could negatively impact our product development efforts, operating results and our business. In addition, increased costs associated with managing or relocating our outsourced engineering teams in Ukraine, or engaging with alternative engineering resources outside of Ukraine, could negatively impact our operating results and financial condition.

We may not be able to effectively manage our operations.

As of December 31, 2023, we had 974 employees in our international operations, representing approximately 72% of our worldwide workforce. Our ability to manage our business effectively in the future, including with respect to any future growth, our operation as both a hardware and increasingly software- and SaaS-centric business, the integration of any acquisition efforts, and the breadth of our international operations, will require us to train, motivate and manage our employees successfully, to attract and integrate new employees into our overall operations, to retain key employees and to continue to improve and evolve our operational, financial and management systems. There can be no assurance that we will be successful in any of these efforts, and our failure to effectively manage our operations could have a material and adverse effect on our business, operating results, cash flows and financial condition.

We face risks associated with having facilities and employees located in Israel.

As of December 31, 2023, we maintained facilities in Israel with a total of 255 employees, or approximately 19% of our worldwide workforce. Our employees in Israel engage in a number of activities, for both our Broadband and Video business segments, including research and development, product development, product management, supply chain management for certain product lines and sales activities.

As such, we are directly affected by the political, economic and military conditions affecting Israel, such as the ongoing Hamas-Israel conflict. Any significant conflict involving Israel could have a direct effect on our business, in the form of physical damage or injury, restrictions from traveling or reluctance to travel to from or within Israel by our Israeli and other employees or those of our subcontractors, or the loss of Israeli employees to active military duty. Most of our employees in Israel are currently obligated to perform annual reserve duty in the Israel Defense Forces, and approximately 14% of those employees were called for active military duty in 2023. Approximately 10% of our employees in Israel have been called for military duty in connection with the Hamas-Israel conflict and in the event that more of our employees are called to active duty, certain of our research and development, product development and other activities may be significantly delayed and adversely affected. Further, the interruption or curtailment of trade between Israel and its trading partners, as a result of terrorist attacks or hostilities, conflicts between Israel and any other Middle Eastern country or organization, or any other cause, could significantly harm our business. Additionally, current or future tensions or conflicts in the Middle East, such as the ongoing Hamas-Israel conflict, could materially and adversely affect our business, operating results, financial condition and cash flows.

In order to manage our growth, we must be successful in addressing management succession issues and attracting and retaining qualified personnel.

Our future success will depend, to a significant extent, on the ability of our management to operate effectively, both individually and as a group. We must successfully manage transition and replacement issues that may result from the departure or retirement of members of our executive management. For example, our former Chief Financial Officer announced his decision to resign in March 2023 and we appointed our current Chief Financial Officer in May 2023. Any significant leadership change or senior management transition involves inherent risks and any failure to ensure timely and suitable replacements and smooth transition could hinder our strategic planning, business execution, and future performance. We cannot provide assurances that any current or future changes of management personnel in the future will not cause disruption to operations or customer relationships or a decline in our operating results.

We are also dependent on our ability to retain and motivate our existing highly qualified personnel, in addition to attracting new highly qualified personnel. Competition for qualified management, technical and other personnel is often intense, particularly in Silicon Valley, Israel and Hong Kong where we have significant research and development activities, and we may not be successful in attracting and retaining such personnel. Competitors and others have in the past attempted, and are likely in the future to attempt, to recruit our employees. While our employees are required to sign standard agreements concerning confidentiality, non-solicitation and ownership of inventions, other than in Israel, we generally do not have non-competition agreements with our personnel. The loss of the services of any of our key personnel, the inability to attract or retain highly qualified personnel in the future or delays in hiring such personnel, particularly senior management and engineers and other technical personnel, could negatively affect our business and operating results. Furthermore, a certain portion of our personnel in the United States is comprised of foreign nationals whose ability to work for us depends on obtaining the necessary visas. Our ability to hire and retain foreign nationals in the United States, and their ability to remain and work in the United States, is affected by various laws and regulations, including limitations on the availability of visas. Changes in U.S. laws or regulations affecting the availability of visas have, and may continue to adversely affect, our ability to hire or retain key personnel and as a result may impair our operations.

Our products include third-party technology and intellectual property, and our inability to acquire new technologies or use third-party technology in the future could harm our business.

In order to successfully develop and market certain of our planned products, we may be required to enter into technology development or licensing agreements with third parties. Although companies with technology useful to us are often willing to enter into technology development or licensing agreements with respect to such technology, we cannot provide assurances that such agreements may be negotiated on commercially reasonable terms, or at all. The failure to enter, or a delay in entering, into such technology development or licensing agreements, when necessary or desirable, could limit our ability to develop and market new products and could materially and adversely affect our business.

We incorporate certain third-party technologies, including software programs, into our products, and, as noted, intend to utilize additional third-party technologies in the future. In addition, the technologies that we license may not operate properly or as specified, and we may not be able to secure alternatives in a timely manner, either of which could harm our business. We could face delays in product releases until alternative technology can be identified, licensed or developed, and integrated into our products, if we are able to do so at all. These delays, or a failure to secure or develop adequate technology, could materially and adversely affect our business, operating results, financial condition and cash flows.

Cybersecurity incidents, including data security breaches or computer viruses, could harm our business by disrupting our business operations, compromising our products and services, damaging our reputation or exposing us to liability.

Cyber criminals and hackers may attempt to penetrate our network security, or the network security of third parties we work with, including our third-party vendors, service providers, manufacturers, solution providers, partners and consultants, misappropriate our proprietary information or cause business interruptions, or access or misappropriate other sensitive data. Because the techniques used by such computer programmers to access or sabotage networks change frequently and may not be recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. In the past, we and relevant third parties have faced compromises to our network security, though no prior incidents we have identified to date have materially affected our business, results of operations or financial condition. Companies are facing additional attacks as workforces have become more distributed as a result of remote and hybrid working arrangements. Additionally, geopolitical events such as the Hamas-Israel and Russia-Ukraine conflicts may increase the cybersecurity risks we and the third parties we work with face. Our business operations utilize and rely upon numerous third-party vendors, service providers, manufacturers, solution providers, partners and consultants, and any failure of such third parties' cybersecurity measures could materially and adversely affect or disrupt our business. While we have invested in and continue to update our network security and cybersecurity infrastructure and systems, if our cybersecurity systems, or the cybersecurity systems of relevant third parties, fail to protect against unauthorized access, sophisticated cyber-attacks, phishing schemes, ransomware and other malicious code, data protection breaches, computer viruses, denial-of-service attacks, or disruptions from unauthorized tampering or human error, our ability to conduct our business effectively could be damaged in a number of ways, including:

- our intellectual property and other proprietary data, or financial assets, could be stolen;
- our ability to manage and conduct our business operations could be seriously disrupted;
- defects and security vulnerabilities could be introduced into our product, software and SaaS offerings, thereby damaging the reputation and perceived reliability and security of our products; and
- confidential or otherwise sensitive information, including personal data of our customers, employees and business partners, could be compromised and lead to unauthorized, unlawful, or accidental access to, or acquisition, use, corruption, loss, destruction, unavailability, alteration or dissemination of, or damage to, such information.

Should any of the above events occur, or be perceived to have occurred, our reputation, competitive position and business could be significantly harmed, and we could be subject to claims, demands and litigation from customers, third parties, and other individuals and groups, and investigations or other proceedings by governmental authorities, and may be subject to fines, penalties, damages, and other liabilities. Additionally, we could incur significant costs in order to upgrade our cybersecurity systems and remediate damages and otherwise respond to the incident. Consequently, our business, operating results, financial condition and cash flows could be materially and adversely affected.

We may not have applicable or otherwise adequate insurance to protect us from, or adequately mitigate, liabilities or damages resulting from security breaches or incidents. The successful assertion of one or more large claims against us that exceeds any available insurance coverage that we might have, or results in changes to insurance policies (including premium increases or the imposition of large deductible or co-insurance requirements), could have an adverse effect on our business. In addition, we cannot be sure that insurance coverage will be available on acceptable terms or that insurers will not deny coverage as to any future claim.

Our operating results could be adversely affected by natural disasters affecting us or impacting our third-party manufacturers, suppliers, resellers or customers.

Our corporate headquarters is located in California, which is prone to earthquakes. In addition, climate change is contributing to an increase in erratic weather patterns globally and intensifying the impact of certain types of catastrophes, such as floods, wildfires and droughts. We have employees, consultants and contractors located in regions and countries around the world. In the event that any of our business, sales or research and development centers or offices in the United States or internationally are adversely affected by an earthquake, flood, wildfire or by any other natural disaster, we may sustain damage to our operations and properties, which could cause a sustained interruption or loss of affected operations, and cause us to suffer significant financial losses.

We rely on third-party contract manufacturers for the production of our products. Any significant disruption in the business or operations of such manufacturers or of their or our suppliers could adversely impact our business. Our principal contract manufacturers and several of their and our suppliers and our resellers have operations in locations that are subject to natural disasters, such as severe weather, tsunamis, floods, fires and earthquakes, which could disrupt their operations and, in turn, our operations.

In addition, if there is a natural disaster in any of the locations in which our significant customers are located, we face the risk that our customers may incur losses or sustained business interruption, or both, which may materially impair their ability to continue their purchase of products from us. Accordingly, natural disaster in one of the geographies in which we, or our third-party manufacturers, their or our suppliers or our customers, operate could have a material and adverse effect on our business, operating results, cash flows and financial condition.

Financial, Transactional and Tax Risks

We may need additional capital in the future and may not be able to secure adequate funds at all or on terms acceptable to us.

We engage in the design, development and manufacture and sale of a variety of video and broadband products and system solutions, which has required, and will continue to require, significant research and development expenditures.

We are monitoring and managing our cash position in light of ongoing market conditions due to the volatility and uncertainty in the banking and financial services sector, the Hamas-Israel and Russia-Ukraine conflicts, and related macroeconomic conditions. We believe that our existing cash of approximately \$84.3 million at December 31, 2023 will satisfy our cash requirements for at least the next 12 months. However, we may need to raise additional funds to take advantage of presently unanticipated strategic opportunities, satisfy our other cash requirements from time to time, or strengthen our financial position. Our ability to raise funds may be adversely affected by a number of factors, including factors beyond our control, such as weakness in the economic conditions in markets in which we sell our products, bank failures and continued uncertainty in financial, capital and credit markets. There can be no assurance that equity or debt financing will be available to us on reasonable terms, if at all, when and if it is needed.

We may raise additional financing through public or private equity or convertible debt offerings, debt financings, or corporate partnership or licensing arrangements. To the extent we raise additional capital by issuing equity securities or convertible debt, our stockholders may experience dilution, and any new equity or convertible debt securities we issue could have rights, preferences, and privileges superior to holders of our common stock. Further, volatility in equity capital markets may adversely affect market prices of our common stock. This may materially and adversely affect our ability to raise additional capital through public or private equity offerings. To the extent that we raise additional funds through collaboration and licensing arrangements, it may be necessary to relinquish some rights to our technologies or products, or grant licenses on terms that are not favorable to us. Our current debt agreements and any debt financing that we secure in the future require or may require us to pledge assets or enter into covenants that could restrict our operations or our ability to incur further indebtedness and the interest on such debt may adversely affect our operating results. Further, rising interest rates and tightening credit markets may reduce our access to debt financing, which may adversely affect our future business plans and expected growth, and would increase the cost of long-term fixed rate and short-term variable rate borrowings, which could reduce our earnings.

If adequate capital is not available, or is not available on reasonable terms, when needed, we may not be able to take advantage of acquisitions or other market opportunities, to timely develop new products, or to otherwise respond to competitive pressures.

Our Credit Agreement imposes operating and financial restrictions on us.

On December 21, 2023, we entered into a Credit Agreement, among the Company, certain subsidiaries of the Company from time to time party thereto, the lenders party thereto from time to time and Citibank, N.A., as administrative agent (the “Credit Agreement”). The obligations under the Credit Agreement and the other loan documents are required to be guaranteed by certain of our material subsidiaries, and secured by substantially all of the assets of the Company and such subsidiary guarantors. The Credit Agreement provides for a \$120.0 million secured revolving loan facility (the “Revolving Facility”), with a \$10.0 million sublimit for the issuance of letters of credit, and a \$40.0 million secured delayed draw term loan facility (the “Term Facility”). The proceeds of the loans under the Revolving Facility may be used for general corporate purposes. To the extent drawn, the proceeds of the loans under the Term Facility must be used to repurchase, redeem, acquire or otherwise settle our Notes (as defined below). We may borrow term loans in up to three drawings through September 1, 2024, on which date any undrawn commitments under the Term Facility expire. As of December 31, 2023, there were no borrowings and approximately \$0.2 million of letters of credit outstanding under the Credit Agreement.

Our Credit Agreement contains covenants that limit our ability and the ability of our subsidiaries to, subject to certain limitations and exceptions:

- grant liens;
- incur debt;
- make acquisitions and other investments;

- undergo certain fundamental changes;
- dispose of assets;
- make certain restricted payments;
- enter into transactions with affiliates; and
- enter into burdensome agreements.

Further, the Credit Agreement contains financial covenants that require compliance with a maximum consolidated net leverage ratio and minimum fixed charge coverage ratio, in each case, determined in accordance with the terms of the Credit Agreement. These covenants may adversely affect our ability to finance our operations, meet or otherwise address our capital needs, pursue business opportunities or react to market conditions, or otherwise restrict our activities or business plans. In addition, our obligations to repay principal and interest on our indebtedness could make us vulnerable to economic or market downturns.

A breach of any of these covenants could result in an event of default under the Credit Agreement. As of December 31, 2023, we were in compliance with all covenants under the Credit Agreement; however, if an event of default occurs, the lenders may terminate their commitments and accelerate our obligations under the Credit Agreement. Any such acceleration could result in an event of default under the Notes (as defined below). We might not be able to repay our debt or borrow sufficient funds to refinance it on terms that are acceptable to us.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, including our 2.00% Convertible Senior Notes due in 2024 (the “Notes”) and any amounts borrowed under our Credit Agreement, or to make cash payments in connection with any conversion of the Notes or in connection with any repurchase of Notes upon the occurrence of a fundamental change before the maturity date at a repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus any accrued and unpaid interest thereon, as set forth in the indenture governing the Notes, depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness, including the Notes, will depend on our ability to borrow under the terms of the Credit Agreement, the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations, including the Notes and any outstanding loans under the Credit Agreement.

In addition, our ability to repurchase the Notes or to pay cash upon conversions of the Notes or at their maturity may be limited by law, regulatory authority, or agreements governing our future indebtedness. Our failure to repurchase the Notes at a time when the repurchase is required by the indenture governing the Notes or to pay cash upon conversions of the Notes or at their maturity as required by the indenture governing the Notes would constitute a default under the indenture. A default, or the occurrence of a fundamental change or change of control, as applicable, under the indenture governing the Notes, could also lead to a potential default under agreements governing our future indebtedness. Moreover, the occurrence of a fundamental change or change of control, as applicable, under the indenture governing the Notes could itself constitute an event of default under any such indenture. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, or if we are unable to borrow under our Credit Agreement to refinance the Notes, we may not have sufficient funds to repay the indebtedness and repurchase the Notes or make cash payments upon conversions thereof.

Despite our current debt levels, we may still incur substantially more debt or take other actions which would intensify the risks discussed above.

Despite our current consolidated debt levels, we and our subsidiaries may be able to incur substantial additional debt in the future, subject to the restrictions contained in our debt instruments, some of which may be secured debt. We are not restricted under the terms of the indenture governing the Notes from incurring additional debt, securing existing or future debt, recapitalizing our debt or taking a number of other actions that are not limited by the terms of the indenture governing the Notes that could have the effect of diminishing our ability to make payments on our debt (including the Notes) when due. In addition, our Credit Agreement permits us to incur certain additional indebtedness and grant certain liens on our assets, subject to limitations and requirements as set forth in the Credit Agreement, that could intensify the risks discussed above.

Conversions of the Notes in connection with our delivery of the Notice of Redemption (as defined below) may adversely affect our financial condition and operating results.

On January 30, 2024, we issued a notice (the “Notice of Redemption”) to redeem all of the outstanding principal of the Notes pursuant to the terms of the indenture governing the Notes at a redemption price equal to 100% of the principal amount of the Notes to be redeemed plus accrued and unpaid interest to, but excluding, April 18, 2024 (the “Redemption Date”). As a result of our delivery of the Notice of Redemption, holders of the Notes called for redemption will be entitled under the indenture governing the Notes to convert their Notes at their option at any time prior to the close of business on April 16, 2024 in accordance with such indenture at a conversion rate of 118.0550 shares (inclusive of Additional Shares, as defined in such indenture) of our common stock per \$1,000 principal amount of the Notes converted. We have elected under the terms of the indenture governing the Notes to settle any conversions of Notes by paying cash equal to the principal portion of the Notes converted and deliver any conversion value greater than the principal amount shares of common stock. Accordingly, if one or more holders elect to convert their Notes, we will be required to settle the principal portion of our conversion obligation through the payment of cash, which could adversely affect our liquidity.

We have made, and may continue to make, acquisitions, and any acquisition could disrupt our operations, cause dilution to our stockholders and materially and adversely affect our business, operating results, cash flows and financial condition.

As part of our business strategy, from time to time we have acquired, and we may continue to acquire, businesses, technologies, assets and product lines that we believe complement or expand our existing business. Acquisitions involve numerous risks, including the following:

- unanticipated costs or delays associated with an acquisition;
- difficulties in the assimilation and integration of acquired operations, technologies and/or products;
- potential disruption of our business and the diversion of management’s attention from the regular operations of the business during the acquisition process;
- the challenges of managing a larger and more geographically widespread operation and product portfolio after the closing of the acquisition;
- potential adverse effects on new and existing business relationships with suppliers, contract manufacturers, resellers, partners and customers;
- compliance with regulatory requirements, such as local employment regulations and organized labor requirements;
- risks associated with entering markets in which we may have no or limited prior experience;
- the potential loss of key employees of acquired businesses and our own business as a result of integration;
- difficulties in bringing acquired products and businesses into compliance with applicable legal requirements in jurisdictions in which we operate and sell products;
- impact of known potential liabilities or unknown liabilities, including litigation and infringement claims, associated with companies we acquire;
- substantial charges for acquisition costs or for the amortization of certain purchased intangible assets, deferred stock compensation or similar items;
- substantial impairments to goodwill or intangible assets in the event that an acquisition proves to be less valuable than the price we paid for it;
- difficulties in establishing and maintaining uniform financial and other standards, controls, procedures and policies;
- delays in realizing, or failure to realize, the anticipated benefits of an acquisition; and
- the possibility that any acquisition may be viewed negatively by our customers or investors or the financial markets.

Competition within our industry for acquisitions of businesses, technologies, assets and product lines has been, and is likely to continue to be, intense. As such, even if we are able to identify an acquisition that we would like to consummate, we may not be able to complete the acquisition on commercially reasonable terms or because the target chooses to be acquired by another company. Furthermore, in the event that we are able to identify and consummate any future acquisitions, we may, in each of those acquisitions:

- issue equity securities which would dilute current stockholders' percentage ownership;
- incur substantial debt to finance the acquisition or assume substantial debt in the acquisition;
- incur significant acquisition-related expenses;
- assume substantial liabilities, contingent or otherwise; or
- expend significant cash.

These financing activities or expenditures could materially and adversely affect our operating results, cash flows and financial condition or the price of our common stock. Alternatively, due to difficulties in the capital or credit markets that may exist at the time, we may be unable to secure capital necessary to complete an acquisition on reasonable terms, or at all. Moreover, even if we were to obtain benefits from acquisitions in the form of increased revenue and earnings per share, there may be a delay between the time the expenses associated with an acquisition are incurred and the time we recognize such benefits.

As of December 31, 2023, we had approximately \$239.2 million of goodwill recorded on our balance sheet associated with prior acquisitions. In the event we determine that our goodwill is impaired, we would be required to write down all or a portion of such goodwill, which could result in a material non-cash charge to our results of operations in the period in which such write-down occurs.

If we are unable to successfully address one or more of these risks, our business, operating results, financial condition and cash flows could be materially and adversely affected.

We may sell one or more of our product lines, from time to time, as a result of our evaluation of our products and markets, and any such divestiture could adversely affect our continuing business and our expenses, revenues, results of operation, cash flows and financial position.

We periodically evaluate our various product lines and may, as a result, consider the divestiture of one or more of those product lines. Such evaluations, like the current strategic review process for our Video business, may disrupt our business by causing distractions to management, shifts in strategy, decreased employee morale and productivity, and increased turnover. We have sold product lines in the past, and any prior or future divestiture could adversely affect our continuing business and expenses, revenues, results of operations, cash flows and financial position.

Divestitures of product lines have inherent risks, including the expense of selling the product line, the possibility that any anticipated sale will not occur, delays in closing any sale, the risk of lower-than-expected proceeds from the sale of the divested business, unexpected costs associated with the separation of the business to be sold from the seller's information technology and other operating systems, and potential post-closing claims for indemnification or breach of transition services obligations of the seller. Expected cost savings, which are offset by revenue losses from divested businesses, may also be difficult to achieve or maximize due to the seller's fixed cost structure, and a seller may experience varying success in reducing fixed costs or transferring liabilities previously associated with the divested business.

The nature of our business requires the application of complex revenue and expense recognition rules and the current legislative and regulatory environment affecting generally accepted accounting principles is uncertain. Significant changes in current principles could affect our financial statements going forward and changes in financial accounting standards or practices may cause adverse, unexpected financial reporting fluctuations and harm our operating results.

United States generally accepted accounting principles ("U.S. GAAP") are subject to interpretation by the Financial Standards Accounting Board ("FASB"), the SEC and various bodies formed to promulgate and interpret appropriate accounting principles. We are also subject to evolving rules and regulations of the countries in which we do business. Changes to accounting standards or interpretations thereof may result in different accounting principles under U.S. GAAP that have a significant effect on our reported financial results and require us to incur costs and expenses in order to comply with the updated standards or interpretations.

In addition, we have in the past and may in the future need to modify our customer contracts, accounting systems and processes when we adopt future or proposed changes in accounting principles. The cost and effect of these changes may negatively impact our results of operations during the periods of transition.

Fluctuations in our future effective tax rates could affect our future operating results, financial condition and cash flows.

We are required to periodically review our deferred tax assets and determine whether, based on available evidence, a valuation allowance is necessary. The realization of our deferred tax assets, which are predominantly in the United States, is dependent upon the generation of sufficient U.S. and foreign taxable income in the future to offset these assets. Based on our evaluation, we recorded a net decrease in valuation allowance of \$63.9 million and a net increase of \$10.8 million in 2023 and 2022, respectively, against the net deferred tax assets. In 2023, there was a full release of the valuation allowance against U.S. Federal and certain state deferred tax assets due to improved historical earnings and projected earnings. There was no valuation allowance release in 2022. Changes in the amount of the valuation allowance in the U.S. and in foreign jurisdictions could result in a material non-cash expense or benefit in the period in which the valuation allowance is adjusted, and our results of operations could be materially affected.

The calculation of tax liabilities involves dealing with uncertainties in the application of complex global tax regulations. We recognize potential liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on our estimate of whether, and the extent to which, additional taxes will be due. In the event we determine that it is appropriate to create a reserve or increase an existing reserve for any such potential liabilities, the amount of the additional reserve will be charged as an expense in the period in which it is determined. If payment of these amounts ultimately proves to be unnecessary, the reversal of the liabilities would result in tax benefits being recognized in the period when we determine the liabilities are no longer necessary. If the estimate of tax liabilities proves to be less than the ultimate tax assessment for the applicable period, a further charge to expense in the period such shortfall is determined would result. Either such charge to expense could have a material and adverse effect on our operating results for the applicable period.

Our future effective income tax rates could be adversely affected if tax authorities challenge our international tax structure or if our relative mix of U.S. and international income changes for any reason. Accordingly, there can be no assurance that our effective income tax rate will be less than the U.S. federal statutory rate in future periods.

We are subject to taxation-related risks in multiple jurisdictions, and the adoption and interpretation of new tax legislation, tax regulations, tax rulings, or exposure to additional tax liabilities could materially affect our business, financial condition and results of operations.

Tax laws are regularly re-examined and evaluated globally. New laws and interpretations of the law are considered for financial statement purposes in the quarter or year that they are enacted. Tax authorities are increasingly scrutinizing the tax positions of multinational companies. If U.S. or other foreign tax authorities change applicable tax laws, or if there is a change in interpretation of existing law, our overall liability could increase, and our business, financial condition and results of operations may be harmed.

For example, effective as of January 1, 2022, the Tax Cuts and Jobs Act of 2017 eliminated the option to deduct research and development expenditures currently and requires such expenditures to be capitalized and amortized ratably over a five-year period for domestic expenditures or a fifteen-year period for foreign expenditures. The Internal Revenue Service has not issued Treasury Regulations that provide guidance on how to apply this new tax law. If or when Treasury Regulations are released, it may impact the Company's estimate of capitalized costs or the Company's current interpretation of the tax law. However, recently proposed tax legislation, if enacted, would restore the ability to deduct domestic research and development expenditures in the current year through 2025 and would retroactively restore this benefit for 2022 and 2023. Any change in tax law will be accounted for in the period of enactment.

Further, the Inflation Reduction Act of 2022, among other things, imposes a one-percent non-deductible excise tax on certain repurchases of stock that are made by U.S. publicly traded corporations on or after January 1, 2023, which may affect our share repurchase program.

In addition, the Organization for Economic Co-operation and Development (the "OECD"), the European Union, as well as a number of other countries and organizations have recently enacted new laws, and proposed or recommended changes to existing tax laws, that may increase our tax obligations in many countries where we do business or require us to change the manner in which we operate our business. For example, the OECD has introduced a framework to implement a 15% global minimum corporate tax, referred to as Pillar 2, which has been adopted by the European Union for implementation by its Member States into national legislation by the end of 2023 and may be adopted by other jurisdictions. As we expand the scale of our business activities, any changes in U.S. or foreign tax laws that apply to such activities may increase our worldwide effective tax rate and harm our business, financial condition and results of operations.

Legal, Regulatory and Compliance Risks

We or our customers may face intellectual property infringement claims from third parties.

Our industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patent and other intellectual property rights. In particular, leading companies in the telco industry have extensive patent portfolios. Also, patent infringement claims and litigation by entities that purchase or control patents, but do not produce goods or services covered by the claims of such patents (so-called “non-practicing entities” or “NPEs”), have increased rapidly over the last decade or so. From time to time, third parties, including NPEs, have asserted, and may assert in the future, patent, copyright, trademark and other intellectual property rights against us or our customers, and have initiated audits to determine whether we have missed royalty payments for technology that we license. Our suppliers and their customers, including us, may have similar claims asserted against them. A number of third parties, including companies with greater financial and other resources than us, have asserted patent rights to technologies that are important to us.

Any intellectual property litigation, regardless of its outcome, could result in substantial expense and significant diversion of the efforts of our management and technical personnel. An adverse determination in any such proceeding could subject us to significant liabilities and temporary or permanent injunctions and require us to seek licenses from third parties or pay royalties that may be substantial. Furthermore, necessary licenses may not be available on terms satisfactory to us, or at all. An unfavorable outcome on any such litigation matter could require that we pay substantial damages, could require that we pay ongoing royalty payments, or could prohibit us from selling certain of our products. Any such outcome could have a material and adverse effect on our business, operating results, financial condition and cash flows.

Our suppliers and customers may have intellectual property claims relating to our products asserted against them. We have agreed to indemnify some of our suppliers and most of our customers for patent infringement relating to our products. The scope of this indemnity varies, but, in some instances, includes indemnification for damages and expenses (including reasonable attorney’s fees) incurred by the supplier or customer in connection with such claims. If a supplier or a customer seeks to enforce a claim for indemnification against us, we could incur significant costs defending such claim, the underlying claim or both. An adverse determination in either such proceeding could subject us to significant liabilities and have a material and adverse effect on our operating results, cash flows and financial condition.

We may be the subject of litigation which, if adversely determined, could harm our business and operating results.

We may be subject to claims arising in the normal course of business. The costs of defending any litigation, whether in cash expenses or in management time, could harm our business and materially and adversely affect our operating results and cash flows. An unfavorable outcome on any litigation matter could require that we pay substantial damages, or, in connection with any intellectual property infringement claims, could require that we pay ongoing royalty payments or prohibit us from selling certain of our products. In addition, we may decide to settle any litigation, which could cause us to incur significant settlement costs. A settlement or an unfavorable outcome on any litigation matter could have a material and adverse effect on our business, operating results, financial condition and cash flows.

Our failure to adequately protect our proprietary rights and data may adversely affect us.

As of December 31, 2023, we held 133 issued U.S. patents and 47 issued foreign patents, and had 39 patent applications pending. Although we attempt to protect our intellectual property rights through patents, trademarks, copyrights, licensing arrangements, maintaining certain technology as trade secrets and other measures, we can give no assurances that any patent, trademark, copyright or other intellectual property rights owned by us will not be invalidated, circumvented or challenged, that such intellectual property rights will provide competitive advantages to us, or that any of our pending or future patent applications will be issued with the scope of the claims sought by us, if at all. We can give no assurances that others will not develop technologies that are similar or superior to our technologies, duplicate our technologies or design around the patents that we own. In addition, effective patent, copyright and trade secret protection may be unavailable or limited in certain foreign countries in which we do business or may do business in the future.

We may enter into confidentiality or license agreements with our employees, consultants, and vendors and our customers, as needed, and generally limit access to, and distribution of, our proprietary information. Nevertheless, we cannot provide assurances that the steps taken by us will prevent misappropriation of our technology. In addition, we have taken in the past, and may take in the future, legal action to enforce our patents and other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement or invalidity. Such litigation could result in substantial costs and diversion of management time and other resources, and could materially and adversely affect our business, operating results, financial condition and cash flows.

Our use of open source software in some of our products may expose us to certain risks.

Some of our products contain software modules licensed for use from third-party authors under open source licenses. Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. Some open source licenses contain requirements that we make available source code for modifications or derivative works we create based upon the type of open source software we use. If we combine our proprietary software with open source software in a certain manner, we could, under certain of the open source licenses, be required to release the source code of our proprietary software to the public. This could allow our competitors to create similar products with lower development effort and in less time and ultimately could result in a loss of product sales for us.

Although we monitor our use of open source closely, it is possible our past, present or future use of open source has triggered or may trigger the foregoing requirements. Furthermore, the terms of many open source licenses have not been interpreted by U.S. courts, and there is a risk that such licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to commercialize our products. In such event, we could be required to seek licenses from third parties in order to continue offering our products, to re-engineer our products or to discontinue the sale of our products in the event re-engineering cannot be accomplished on a timely basis, any of which could materially and adversely affect our operating results, financial condition and cash flows.

We are subject to import and export control and trade and economic sanction laws and regulations that could subject us to liability or impair our ability to compete in international markets.

Our products are subject to U.S. export control laws, and may be exported outside the United States only with the required export license or through an export license exception, in most cases because we incorporate encryption technology into certain of our products. We are also subject to U.S. trade and economic sanction regulations which include prohibitions on the sale or supply of certain products and services to the United States embargoed or sanctioned countries, governments, persons and entities. In addition, various countries regulate the import of certain technology and have enacted laws that could limit our ability to distribute our products, or could limit our customers' ability to implement our products, in those countries. Although we take precautions and have processes in place to prevent our products and services from being provided in violation of such laws, our products may have been in the past, and could in the future be, provided inadvertently in violation of such laws, despite the precautions we take. In March 2020, we received an administrative subpoena from the U.S. Treasury Department's office of Foreign Assets Control ("OFAC") requesting information about transactions involving Iran. The transactions were by the French company TVN, which we acquired in early 2016. Pursuant to regulations that remained in place until 2018, foreign subsidiaries of U.S. companies were allowed to engage in transactions with Iran if certain requirements were met. In February 2023, OFAC notified us that it had completed its review of these matters and closed its review with the issuance of a Cautionary Letter. While OFAC did not assess any penalties, the Cautionary Letter does not preclude OFAC from taking future enforcement actions if additional information warrants renewed attention. Furthermore, OFAC may consider our regulatory history, including this subpoena, our disclosures and the Cautionary Letter, if we are involved in future enforcement cases for failure to comply with export control laws and regulations. If we are found to have violated U.S. export control laws as a result of future investigations, we and certain of our employees could be subject to civil or criminal penalties, including the possible loss of export privileges, monetary penalties, and, in extreme cases, imprisonment of responsible employees for knowing and willful violations of these laws which could lead to penalties, reputational harm, loss of access to certain markets, or otherwise.

In addition, we may be subject to customs duties that could have a significant adverse impact on our operating results or, if we are able to pass on the related costs in any particular situation, would increase the cost of the related product to our customers. As a result, the future imposition of significant increases in the level of customs duties or the creation of import quotas on our products in Europe or in other jurisdictions, or any of the limitations on international sales described above, could have a material adverse effect on our business, operating results, financial condition and cash flows. Further, some of our customers in Europe have been, or are being, audited by local governmental authorities regarding the tariff classifications used for importation of our products. Import duties and tariffs vary by country and a different tariff classification for any of our products may result in higher duties or tariffs, which could have an adverse impact on our operating results and potentially increase the cost of the related products to our customers.

Our business and industry are subject to various laws and regulations that could adversely affect our business, operating results, cash flows and financial condition.

Our business and industry are regulated under various federal, state, local and international laws. For example, we are subject to environmental regulations such as the European Union’s Waste Electrical and Electronic Equipment (“WEEE”) and Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (“RoHS”) directives and similar legislation enacted in other jurisdictions worldwide. Our failure to comply with these laws could result in our being directly or indirectly liable for costs, fines or penalties and third-party claims, and could jeopardize our ability to conduct business in such regions and countries. We expect that our operations will be affected by other new environmental laws and regulations on an ongoing basis. Although we cannot predict the ultimate impact of any such new laws and regulations, they would likely result in additional costs, and could require that we redesign or change how we manufacture our products, any of which could have a material and adverse effect on our operating results, financial condition and cash flows.

We are subject to the Sarbanes-Oxley Act of 2002 which, among other things, requires an annual review and evaluation of our internal control over financial reporting. If we conclude in future periods that our internal control over financial reporting is not effective or if our independent registered public accounting firm is unable to provide an unqualified attestation as of future year-ends, we may incur substantial additional costs in an effort to correct such problems, and investors may lose confidence in our financial statements, and our stock price may decrease in the short term, until we correct such problems, and perhaps in the long term, as well.

We are subject to requirements under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 that require us to conduct research, disclose, and report whether or not our products contain certain conflict minerals sourced from the Democratic Republic of Congo or its surrounding countries. The implementation of these requirements could adversely affect the sourcing, availability, and pricing of the materials used in the manufacture of components used in our products. In addition, we may incur certain additional costs to comply with the disclosure requirements, including costs related to conducting diligence procedures to determine the sources of conflict minerals that may be used or necessary to the production of our products and, if applicable, potential changes to products, processes or sources of supply as a consequence of such verification activities. It is also possible that we may face reputational harm if we determine that certain of our products contain minerals not determined to be conflict-free and/or we are unable to alter our products, processes or sources of supply to avoid such materials.

Changes in telco legislation and regulations in the United States and other countries could affect our sales and the revenue we are able to derive from our products. In particular, on December 14, 2017, the U.S. Federal Communications Commission (“FCC”) voted to repeal the “net neutrality” rules and return to a “light-touch” regulatory framework. The FCC’s new rules, which took effect in June 2018, granted providers of broadband internet access services greater freedom to make changes to their services, including, potentially, changes that may discriminate against or otherwise harm our business. However, a number of parties have appealed these rules, which appeals are currently being reviewed by the D.C. Circuit Court of Appeals; thus the future impact of the FCC’s repeal and any changes thereto remains uncertain. Additionally, on September 30, 2018, California enacted the California Internet Consumer Protection and Net Neutrality Act of 2018. Since the FCC repealed its nationwide regulations, seven states have also enacted a state-level net neutrality law and a number of other states are considering legislation or executive actions that would regulate the conduct of broadband providers. We cannot predict whether the FCC order or state initiatives will be modified, overturned, or vacated by legal action of the court, federal legislation, or the FCC. The repeal of the net neutrality rules or other regulations dealing with access by competitors to the networks of incumbent operators could slow or stop infrastructure and services investments or expansion by service providers. Increased regulation of our customers’ pricing or service offerings could limit their investments and, consequently, revenue from our products. The impact of new or revised legislation or regulations could have a material adverse effect on our business, operating results, financial condition and cash flows.

We depend significantly on our international revenue and are subject to the risks associated with international operations, including those of our resellers, contract manufacturers and outsourcing partners, which may negatively affect our operating results.

Revenue derived from customers outside of the United States in the fiscal years ended December 31, 2023, 2022 and 2021 represented approximately 33%, 37% and 44% of our revenue, respectively. Although no assurance can be given with respect to international sales growth in any one or more regions, we expect that international revenue will likely continue to represent, from year to year, a significant, and potentially increasing, percentage of our annual revenue for the foreseeable future. A significant percentage of our revenue is generated from sales to resellers, VARs and systems integrators, particularly in emerging market countries. Furthermore, the majority of our employees are based in our international offices and locations, and most of our contract manufacturing occurs outside of the United States. In addition, we outsource a portion of our research and development activities to certain third-party partners with development centers located in different countries, particularly Ukraine and India.

Our international operations, international operations of our resellers, contract manufacturers and outsourcing partners, and our efforts to maintain and increase revenue in international markets are subject to a number of risks, which are generally greater with respect to emerging market countries, including the following:

- growth and stability of the economy in one or more international regions, including regional economic impacts of the Hamas-Israel and Russia-Ukraine conflicts and tensions between China and Taiwan and the United States;
- fluctuations in currency exchange rates;
- ability of certain non-U.S. customers to timely make payments in U.S. dollar due to local government currency controls;
- changes in foreign government regulations and telco standards;
- import and export license requirements, tariffs, taxes, economic sanctions, contractual limitations and other trade barriers;
- our significant reliance on resellers and others to purchase and resell our products and solutions, particularly in our Video business and in emerging market countries;
- availability of credit, particularly in emerging market countries;
- longer collection periods and greater difficulty in enforcing contracts and collecting accounts receivable, especially from smaller customers and resellers, particularly in emerging market countries;
- compliance with the FCPA, the U.K. Bribery Act and/or similar anti-corruption and anti-bribery laws, particularly in emerging market countries;
- the burden of complying with a wide variety of foreign laws, treaties and technical standards;
- fulfilling “country of origin” requirements for our products for certain customers;
- difficulty in staffing and managing foreign operations;
- business and operational disruptions or delays caused by political, social and/or economic instability and unrest (e.g., Ukraine and Israel), including risks related to terrorist activity, particularly in emerging market countries;
- changes in economic policies by foreign governments, including the imposition and potential continued expansion of economic sanctions by the United States and the European Union on the Russian Federation;
- changes in diplomatic and trade relationships, including the imposition of new trade restrictions, trade protection measures, import or export requirements, trade embargoes and other trade barriers, including those between the United States and China;
- any negative economic impacts resulting from the political environment in the United States or the United Kingdoms’ exit from the European Union; and
- business and economic disruptions and delays caused by outbreaks of disease, epidemics and potential pandemics.

We have certain international customers who are billed in their local currency, primarily the Euro, British pound and Japanese yen, which subjects us to foreign currency risk. In addition, a portion of our operating expenses relating to the cost of certain international employees, are denominated in foreign currencies, primarily the Euro, Israeli shekel, British pound, Singapore dollar, Chinese yuan and Indian rupee. Although we do hedge against the Euro, British pound, Israeli shekel and Japanese yen, gains and losses on the conversion to U.S. dollars of accounts receivable, accounts payable and other monetary assets and liabilities arising from international operations may contribute to fluctuations in our operating results. Furthermore, payment cycles for international customers are typically longer than those for customers in the United States. Unpredictable payment cycles could cause us to fail to meet or exceed the expectations of security analysts and investors for any given period.

Most of our international revenue is denominated in U.S. dollars, and fluctuations in currency exchange rates could cause our products to become relatively more expensive to customers in a particular country or region, leading to a reduction in revenue or profitability from sales in that country or region. The potential negative impact of a strong U.S. dollar on our business may be exacerbated by the significant devaluation of a number of foreign currencies. Also, if the U.S. dollar were to weaken against many foreign currencies, there can be no assurance that a weaker dollar would lead to growth in customer spending in foreign markets.

Our operations outside the United States also require us to comply with a number of U.S. and international regulations that prohibit improper payments or offers of payments to foreign governments and their officials and political parties for corrupt purposes. For example, our operations in countries outside the United States are subject to the FCPA and similar laws, including the U.K. Bribery Act. Our activities in certain emerging countries create the risk of unauthorized payments or offers of payments by one of our employees, consultants, sales agents or channel partners that could be in violation of various anti-corruption laws, even though these parties may not be under our control. Under the FCPA and U.K. Bribery Act, companies may be held liable for the corrupt actions taken by their directors, officers, employees, channel partners, sales agents, consultants, or other strategic or local partners or representatives. We have internal control policies and procedures with respect to FCPA compliance, have implemented FCPA training and compliance programs for our employees, and include in our agreements with resellers a requirement that those parties comply with the FCPA. However, we cannot provide assurances that our policies, procedures and programs will prevent violations of the FCPA or similar laws by our employees or agents, particularly in emerging market countries, and as we expand our international operations. Any such violation, even if prohibited by our policies, could result in criminal or civil sanctions against us.

The effect of one or more of these international risks could have a material and adverse effect on our business, financial condition, operating results and cash flows.

Risks Related to Ownership of Our Common Stock

Some anti-takeover provisions contained in our certificate of incorporation and bylaws, as well as provisions of Delaware law, could impair a takeover attempt.

We have provisions in our certificate of incorporation and bylaws that could have the effect of rendering more difficult or discouraging an acquisition deemed undesirable by our Board. These include provisions:

- authorizing blank check preferred stock, which could be issued with voting, liquidation, dividend and other rights superior to our common stock;
- limiting the liability of, and providing indemnification to, our directors and officers;
- limiting the ability of our stockholders to call, and bring business before, special meetings;
- requiring advance notice of stockholder proposals for business to be conducted at meetings of our stockholders and for nominations of candidates for election to our Board;
- controlling the procedures for conducting and scheduling of Board and stockholder meetings; and
- providing our Board with the express power to postpone previously scheduled annual meetings and to cancel previously scheduled special meetings.

These provisions could delay hostile takeovers, changes in control of the Company or changes in our management. As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation law, which prevents some stockholders holding more than 15% of our outstanding common stock from engaging in certain business combinations without approval of the holders of substantially all of our outstanding common stock. Any provision of our certificate of incorporation or bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Our common stock price may be extremely volatile, and the value of an investment in our stock may decline.

Our common stock price has been highly volatile. We expect that this volatility will continue in the future due to factors such as:

- general market and economic conditions, including inflation, rising interest rates, volatile capital markets, uncertainty and volatility in the financial services sector, the Hamas-Israel and Russia-Ukraine conflicts and rising tensions between China and Taiwan and the United States;
- actual or anticipated variations in operating results;
- increases or decreases in the general stock market or to the stock prices of technology companies;
- announcements of technological innovations, new products or new services by us or by our competitors or customers;
- changes in financial estimates or recommendations by stock market analysts regarding us or our competitors;

- announcements by us or our competitors of significant acquisitions, dispositions, strategic partnerships, joint ventures or capital commitments;
- announcements by our customers regarding end user market conditions and the status of existing and future infrastructure network deployments;
- additions or departures of key personnel; and
- future equity or debt offerings or our announcements of these offerings.

In addition, in recent years, the stock market in general, and The NASDAQ Global Select Market and the securities of technology companies in particular, have experienced extreme price and volume fluctuations. These fluctuations have often been unrelated or disproportionate to the operating performance of individual companies. These broad market fluctuations have in the past, and may in the future, materially and adversely affect our stock price, regardless of our operating results. In these circumstances, investors may be unable to sell their shares of our common stock at or above their purchase price over the short term, or at all.

We cannot guarantee that our stock repurchase program will be fully implemented or that it will enhance long-term stockholder value.

In February 2022, our Board of Directors approved a stock repurchase program for the repurchase of up to \$100 million of the outstanding shares of our common stock. The repurchase program expires in February 2025 and we are not obligated to repurchase a specified number or dollar value of shares. Share repurchases will be made from time to time in open market purchases and 10b5-1 trading plans, as permitted by securities laws and other legal requirements. Any share repurchases remain subject to the circumstances in place at that time, including prevailing market prices. As a result, there can be no guarantee around the timing or volume of our share repurchases. The stock repurchase program could affect the price of our common stock, increase volatility and diminish our cash reserves. Our repurchase program may be suspended or terminated at any time and, even if fully implemented, may not enhance long-term stockholder value.

Our stock price may decline if additional shares are sold in the market or if analysts drop coverage of or downgrade our stock.

Future sales of substantial amounts of shares of our common stock by our existing stockholders in the public market, or the perception that these sales could occur, may cause the market price of our common stock to decline. In addition, we issue additional shares upon exercise of stock options, including under our 2002 Employee Stock Purchase Plan, and in connection with grants of restricted stock units on an ongoing basis. To the extent we do not elect to pay solely cash upon conversion of the Notes, we will also be required to issue additional shares of common stock upon conversion. Increased sales of our common stock in the market after exercise of outstanding stock options or grants of restricted stock units could exert downward pressure on our stock price. These sales also might make it more difficult for us to sell equity or equity-related securities in the future at a time and price we deem appropriate.

The trading market for our common stock relies in part on the availability of research and reports that third-party industry or securities analysts publish about us and our business. If we do not maintain adequate research coverage or if one or more of the analysts who do cover us downgrade our stock or publishes inaccurate or unfavorable research about our business, our stock price may decline. If one or more of these analysts cease coverage of us or fails to publish reports on us regularly, we could lose visibility in the market, which in turn could cause the liquidity of our stock and our stock price to decline.

Item 1B. *UNRESOLVED STAFF COMMENTS*

None.

Item 1C. *CYBER SECURITY*

Risk Management and Strategy

We have established policies and processes for assessing, identifying, and managing material risk from cybersecurity threats, and have integrated these processes into our overall risk management systems and processes. We routinely assess material risks from cybersecurity threats, including any potential unauthorized occurrence on or conducted through our information systems that may result in adverse effects on the confidentiality, integrity, or availability of our information systems or any information residing therein.

We conduct periodic and ad-hoc risk assessments to identify cybersecurity threats, as well as assessments in the event of a material change in our business practices that may affect information systems that are vulnerable to such cybersecurity threats. These risk assessments include identification of reasonably foreseeable internal and external risks, the likelihood and potential damage that could result from such risks, and the sufficiency of existing policies, procedures, systems, and safeguards in place to manage such risks.

Following these risk assessments, we evaluate whether and how to re-design, implement, and maintain reasonable safeguards to mitigate identified risks and reasonably address any identified gaps in existing safeguards. We also regularly monitor the effectiveness of our safeguards. We devote significant resources and designate high-level personnel, including our Chief Cybersecurity Officer (“CCO”), who reports to our Chief Executive Officer, to manage the risk assessment and mitigation process.

As part of our overall risk management system, we monitor and test our safeguards and train our employees on these safeguards, in collaboration with human resources, IT, and management. Personnel at all levels and departments are made aware of our cybersecurity policies through trainings.

We engage auditors and other third parties in connection with our risk assessment processes. These service providers assist us to monitor, enhance and test our safeguards.

We require key third-party service providers to certify that such providers have the ability to implement and maintain appropriate security measures, consistent with all applicable laws, to implement and maintain reasonable security measures in connection with their work with us, and to promptly report any suspected breach of their security measures that may affect our company.

For additional information regarding whether any risks from cybersecurity threats, including as a result of any previous cybersecurity incidents, have materially affected or are reasonably likely to materially affect our company, including our business strategy, results of operations, or financial condition, please refer to Item 1A, “Risk Factors,” in this annual report on Form 10-K, including the risk factors entitled “Cybersecurity incidents, including data security breaches or computer viruses, could harm our business by disrupting our business operations, compromising our products and services, damaging our reputation or exposing us to liability”.

Governance

One of the key functions of our board of directors is informed oversight of our risk management process, including risks from cybersecurity threats. Our board of directors is responsible for monitoring and assessing strategic risk exposure, and our executive officers are responsible for the day-to-day management of the material risks we face. Our board of directors administers its cybersecurity risk oversight function directly as a whole, as well as through the audit committee.

Our CCO is primarily responsible for assessing and managing our material risks from cybersecurity threats, in close coordination with our Senior Vice President, Operations and IT, and the senior executive leaders of our Video and Broadband business segments. Our CCO’s cybersecurity experience includes overseeing the design and implementation of cybersecurity measures and safeguards for Harmonic’s Video business software and SaaS offerings as the former long-serving Chief Technology Officer of the Video business, and responsibility at a previous company for the cybersecurity architecture and implementation of an online banking platform and an online transaction processing system for gaming.

Our CCO oversees our cybersecurity policies and processes, including those described in “Risk Management and Strategy” above, in close coordination with the senior executive leaders of our corporate information technology function and Video and Broadband business segments. The processes by which our CCO is informed about and monitors the prevention, detection, mitigation, and remediation of cybersecurity incidents includes the following: regular reports from the Company’s 24/7 cybersecurity operations center monitoring systems and established incident reporting and escalation from the executive leaders of our corporate information technology function and Video and Broadband business segments.

Our CCO provides quarterly briefings to the audit committee regarding our company’s cybersecurity risks and activities, including any recent cybersecurity incidents and related responses, cybersecurity systems testing, activities of third parties, and the like. Our audit committee provides regular updates to the board of directors on such reports. In addition, our CCO provides annual briefings to the board of directors on cybersecurity risks and activities.

Item 2. *PROPERTIES*

All of our facilities are leased, including our principal operations and corporate headquarters in San Jose, California. We have research and development centers in the United States, France, Israel and Hong Kong. We have sales and service offices primarily in the United States and various locations in Europe and Asia. Our leases, which expire at various dates through September 2032, are for an aggregate of approximately 292,742 square feet of space. We have two business segments: Video and Broadband. Because of the interrelation of these segments, a majority of these segments use substantially all of the properties, at least in part, and we retain the flexibility to use each of the properties in whole or in part for each of the segments. We believe that the facilities that we currently occupy are adequate for our current needs and that suitable additional space will be available, as needed, to accommodate the presently foreseeable expansion of our operations.

Item 3. *LEGAL PROCEEDINGS*

From time to time, we are involved in lawsuits as well as subject to various legal proceedings, claims, threats of litigation, and investigations in the ordinary course of business, including claims of alleged infringement of third-party patents and other intellectual property rights, commercial, employment, and other matters. While certain matters to which we are a party may specify the damages claimed, such claims may not represent reasonably possible losses. Given the inherent uncertainties of litigation, the ultimate outcome of these matters cannot be predicted at this time, nor can the amount of possible loss or range of loss, if any, be reasonably estimated.

An unfavorable outcome on any litigation matters could require us to pay substantial damages, or, in connection with any intellectual property infringement claims, could require us to pay ongoing royalty payments or could prevent us from selling certain of our products. As a result, a settlement of, or an unfavorable outcome on, any of the matters referenced above or other litigation matters could have a material adverse effect on our business, operating results, financial position and cash flows.

Our industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patent and other intellectual property rights. From time to time, third parties have asserted, and may in the future assert, exclusive patent, copyright, trademark and other intellectual property rights against us or our customers. Such assertions arise in the normal course of our operations. The resolution of any such assertions and claims cannot be predicted with certainty.

Item 4. *MINE SAFETY DISCLOSURE*

Not applicable.

PART II

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

Market Information of our Common Stock

Our common stock is traded on The NASDAQ Global Select Market under the symbol HLIT, and has been listed on NASDAQ since our initial public offering in 1995.

Holders

As of February 12, 2024, there were approximately 269 holders of record of our common stock.

Dividend Policy

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

Unregistered Sales of Equity Securities

There were no unregistered sales of equity securities during the year ended December 31, 2023.

Issuer Purchases of Equity Securities

In February 2022, the Board of Directors authorized the Company to repurchase up to \$100 million of the Company's outstanding shares of common stock through February 2025. The Company is authorized to repurchase, from time-to-time, shares of its outstanding common stock through open market purchases and 10b5-1 trading plans, in accordance with applicable rules and regulations, at such time and such prices as management may decide. The program does not obligate the Company to repurchase any specific number of shares and may be discontinued at any time. The actual timing and amount of repurchases are subject to business and market conditions, corporate and regulatory requirements, stock price, acquisition opportunities and other factors. As of December 31, 2023, approximately \$94.9 million of the share repurchase authorization remained available.

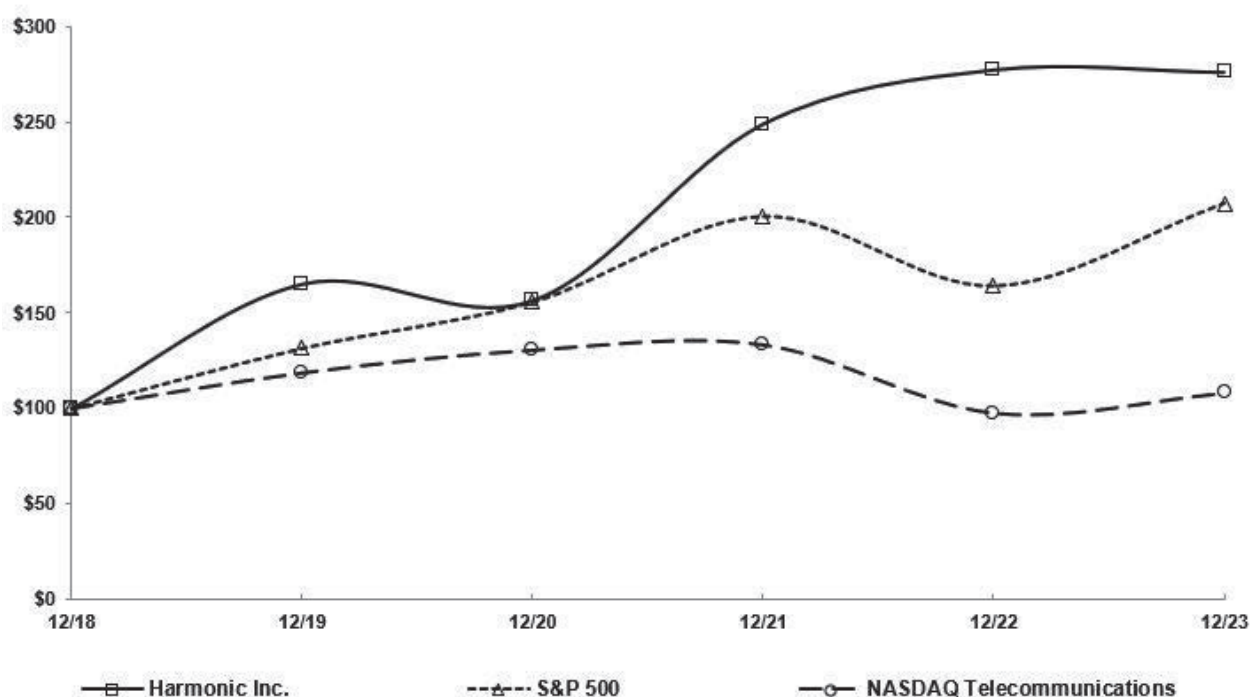
There were no repurchase activities during the year ended December 31, 2023.

Stock Performance Graph

Set forth below is a line graph comparing the annual percentage change in the cumulative return to the stockholders of our common stock with the cumulative return of The NASDAQ Telecommunications Index and of the Standard & Poor's (S&P) 500 Index for the period commencing December 31, 2018 and ending on December 31, 2023. The graph assumes that \$100 was invested in each of the Company's common stock, the S&P 500 and The NASDAQ Telecommunications Index on December 31, 2018, and assumes the reinvestment of dividends, if any. The comparisons shown in the graph below are based upon historical data. Harmonic cautions that the stock price performance shown in the graph below is not indicative of, nor intended to forecast, the potential future performance of the Company's common stock.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Harmonic Inc., the S&P 500 Index
and the NASDAQ Telecommunications Index



*\$100 invested on 12/31/18 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.

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	12/18	12/19	12/20	12/21	12/22	12/23
Harmonic Inc.	100.00	165.25	156.57	249.15	277.54	276.27
S&P 500	100.00	131.49	155.68	200.37	164.08	207.21
NASDAQ Telecom	100.00	118.74	130.71	133.51	97.62	108.00

The information contained in this Stock Performance Graph section shall not be deemed to be “soliciting material,” “filed” or incorporated by reference in previous or future filings with the SEC, or subject to the liabilities of Section 18 of the Exchange Act, except to the extent that Harmonic specifically incorporates it by reference into a document filed under the Securities Act or the Exchange Act.

Item 6. [RESERVED]

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

The following discussion should be read in conjunction with the consolidated financial statements and the related notes. The following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include, but are not limited to, those discussed below and those listed under Item 1A, Risks Factors. For discussion of comparison of our results of operations and cash flows for the fiscal years ended December 31, 2022 and 2021, refer to Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, of our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on February 28, 2023.

Business Overview

We are a leading global provider of (i) broadband solutions that enable broadband operators to more efficiently and effectively deploy high-speed internet, for data, voice and video services for their customers and (ii) versatile and high performance video delivery software, products, system solutions and services that enable our customers to efficiently create, prepare, store, playout and deliver a full range of high-quality broadcast and streaming video services to consumer devices, including televisions, personal computers, laptops, tablets and smart phones.

We classify our total revenue in two categories, "Appliance and integration" and "SaaS and service." The "Appliance and integration" revenue category includes hardware, licenses and professional services and is reflective of non-recurring revenue, while the "SaaS and service" category includes usage fees for our SaaS platform and support service revenue from our appliance-based customers and reflects our recurring revenue stream.

We conduct business in three geographic regions—the Americas, EMEA and APAC—and operate in two segments, Broadband and Video. Our Broadband business sells broadband access solutions and related services, including our cOS (formerly CableOS) software-based broadband access solutions, to broadband operators globally. Our Video business sells video processing, production and playout solutions, and services worldwide to cable operators and satellite and telco Pay-TV service providers, which we refer to collectively as "service providers," as well as to broadcast and media companies, including streaming media companies. Our Video business infrastructure solutions are delivered either through shipment of our products, software licenses or as SaaS subscriptions.

Historically, our revenue has been dependent upon spending in the cable, satellite, telco, broadcast and media industries, including streaming media. Our customers' spending patterns are dependent on a variety of factors, including but not limited to: economic conditions in the United States and international markets, and impact of factors such as the Hamas-Israel and Russia-Ukraine conflicts, inflation, rising interest rates, potential supply chain disruptions, volatility in capital markets and foreign currency fluctuations; volatility and uncertainty in the banking and financial services sector; access to financing; annual budget cycles of each of the industries we serve; impact of industry consolidations; customers suspending or reducing spending in anticipation of new products or new standards; and new industry trends and/or technology shifts. If our product portfolio and product development plans do not position us well to capture an increased portion of the spending in the markets in which we compete, our revenue may decline. As we attempt to further diversify our customer base in these markets, we may need to continue to build alliances with other equipment manufacturers and suppliers, cloud service providers, content providers, resellers and system integrators, managed services providers and software developers; adapt our products for new applications; take orders at prices resulting in lower margins; and build internal expertise to handle the particular operational, payment, financing and/or contractual demands of our customers, which could result in higher operating costs for us.

More recently, the United States has experienced high levels of inflation, which may result in decreased demand for our products and services, increases in our operating costs including our labor costs, constrained credit and liquidity, reduced customer spending and volatility in financial markets. The Federal Reserve has raised, and may continue to raise, interest rates in response to concerns over inflation risk. There continues to be uncertainty in the changing market and economic conditions, including the possibility of additional measures that could be taken by the Federal Reserve and other government agencies, related to macroeconomic conditions, adverse business conditions and liquidity concerns, or bank failures or instability in the financial services sector, geopolitical disruptions and concerns over inflation risk.

Our Broadband strategy is focused on continuing to develop and deliver software-based broadband access technologies and related DAA nodes and other hardware devices, which we refer to as our cOS solutions, to our broadband operator customers. We believe our cOS software-based broadband access solutions are superior to hardware-based systems and deliver unprecedented scalability, agility and cost savings for our customers. Our cOS solutions, which can be deployed based on a centralized, DAA or hybrid architecture, enable our customers to migrate to multi-gigabit broadband capacity and the fast deployment of DOCSIS and/or FTTH data, video and voice services. We believe our cOS solutions resolve space and power constraints in broadband operator facilities, eliminate dependence on hardware upgrade cycles and significantly reduce total cost of ownership, and are helping us become a major player in the broadband access market. In the meantime, we believe our Broadband segment will continue to gain momentum in the marketplace as our customers adopt and deploy our virtualized DOCSIS, CMTS and FTTH solutions and distributed access architectures. We continue to make progress in the development of our cOS solutions and related DAA nodes and hardware devices, in the growth of our Broadband business, with expanded commercial deployments, field trials, and customer engagements.

We believe a material and growing portion of the opportunities for our Video business are linked to the industry and our customers (i) continuing to adopt streaming technologies to capture, process and deliver video content to consumers and, increasingly, utilizing public cloud solutions like our VOS SaaS platform to do so; (ii) transforming existing broadcast infrastructure workflows into more flexible, efficient and cost-effective operations running in public clouds; and (iii) for those customers maintaining on-premise video delivery infrastructure, continuing to upgrade and replace aging equipment with next-generation software-based appliances that significantly reduce operational complexity. Our Video business strategy is focused on continuing to develop and deliver products, solutions and services to enable and support these trends. Currently, we are seeing a slow-down in capital spending by some of our Video business customers, which is causing delays for some of our appliance-based projects and creating near-term headwinds for our Video appliance business.

Video Business Strategic Review

As previously disclosed in our Q3 2023 earnings press release and Form 10-Q filed on November 3, 2023, we initiated a formal strategic review process for our Video business to better position the Company for long-term shareholder value creation. As noted in our prior disclosures, we received indications of interest in our Video business from a number of parties. To date, that interest has not yet translated into a definitive agreement with any party. We are continuing the strategic review process, and no specific timetable has been established for the completion of the review. We do not intend to disclose further details with respect to the review process unless and until our board of directors approves a specific transaction or otherwise concludes its review.

CRITICAL ACCOUNTING ESTIMATES

Our unaudited condensed consolidated financial statements and the related notes included elsewhere in this report are prepared in accordance with U.S. GAAP. The preparation of these unaudited condensed consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

We believe that the following accounting estimates involve a greater degree of judgement or complexity than our other accounting estimates. Accordingly, the critical accounting estimates that we believe have the most significant impact on Harmonic's unaudited condensed consolidated financial statements are set forth below:

- Valuation of inventories; and
- Accounting for income taxes

Valuation of Inventories

We state inventories at the lower-of-cost (determined on a first-in, first-out basis) or net realizable value, including allowances for excess and obsolete inventory. These reserves are based on management's assumptions about and analysis of relevant factors including current levels of orders and backlog, forecasted demand, market conditions, and expected product lifecycles. Situations that could cause changes in the level of these inventory reserves include a decline in business and economic conditions, a decline in consumer confidence caused by changes in market conditions, a sudden and significant decline in demand for our products, inventory obsolescence because of rapidly changing technology and consumer requirements, or failure to estimate end customer demand properly. If actual market conditions deteriorate from those anticipated by management, additional allowances for excess and obsolete inventory could be required and may be material to our results of operations.

The gross amount of inventory reserves charged to the cost of revenues totaled \$7.4 million, \$6.0 million, in 2023 and 2022, respectively.

Accounting for Income Taxes

In preparing our consolidated financial statements, we estimate our income taxes for each of the jurisdictions in which we operate. We estimate actual current tax expense together with assessing temporary differences resulting from different treatment of items, such as accruals and allowances not currently deductible for tax purposes. These differences result in deferred tax assets and liabilities, which are included in our consolidated balance sheets.

Management's judgment is required in determining the provision for income taxes, deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. We record a valuation allowance to reflect uncertainties about whether we will be able to utilize our deferred tax assets before they expire. In evaluating the need for a full or partial valuation allowance, all positive and negative evidence must be considered, including our forecast of taxable income over the applicable carryforward periods, its current financial performance, its market environment, and other factors. Based on the available objective evidence, at December 31, 2023, we determined it appropriate to release the valuation allowance against U.S. federal and certain other states net deferred tax assets of \$67.7 million and recorded a one-time income tax benefit. We believe it is not more likely than not the California net deferred tax assets of \$32.3 million will be realizable. Accordingly, a full valuation allowance of \$32.3 million is maintained against the California net deferred tax assets. To the extent that we determine the deferred tax assets are realizable on a more likely than not basis and an adjustment is needed, an adjustment will be recorded in the fiscal period the determination is made.

Results of Operations

Net Revenue

The following table presents the breakdown of net revenue by category and geographical region:

(in thousands, except percentages)	Year Ended December 31,			2023 vs. 2022	
	2023	2022	2021		
Appliance and integration	\$ 435,878	\$ 473,806	\$ 369,767	\$ (37,928)	(8)%
as % of total net revenue	72 %	76 %	73 %		
SaaS and service	172,029	151,151	137,382	20,878	14 %
as % of total net revenue	28 %	24 %	27 %		
Total net revenue	<u>\$ 607,907</u>	<u>\$ 624,957</u>	<u>\$ 507,149</u>	<u>\$ (17,050)</u>	<u>(3)%</u>
Americas	\$ 447,700	\$ 452,869	\$ 335,731	\$ (5,169)	(1)%
as % of total net revenue	74 %	73 %	66 %		
EMEA	127,689	133,095	126,427	(5,406)	(4)%
as % of total net revenue	21 %	21 %	25 %		
APAC	32,518	38,993	44,991	(6,475)	(17)%
as % of total net revenue	5 %	6 %	9 %		
Total net revenue	<u>\$ 607,907</u>	<u>\$ 624,957</u>	<u>\$ 507,149</u>	<u>\$ (17,050)</u>	<u>(3)%</u>

Appliance and integration net revenue decreased by \$37.9 million in 2023, as compared to 2022, primarily due to a decrease of \$68.2 million in our Video segment revenue, partially offset by an increase of \$30.3 million in our Broadband segment revenue. The decrease in our Video segment revenue was mainly due to a one-time deployment of our appliance products for a customer in 2022 amounting to a \$41.6 million and a decrease of \$26.6 million attributable to lower sales across all regions in 2023. The increase in our Broadband segment revenue was mainly contributed by higher volume from our existing customers including initial shipments on a new project with a large Tier 1 customer in 2023.

SaaS and service net revenue increased by \$20.9 million in 2023, as compared to 2022, primarily due to an increase of \$10.4 million in revenue from increased usage by our existing customers, a \$5.8 million increase in revenue from the acquisition of new customers, and a \$4.7 million increase in revenue from higher demand for support services from our existing customers.

Americas net revenue decreased by \$5.2 million in 2023, as compared to 2022, primarily due to a one-time deployment of our Video appliance products for a customer in 2022 amounting to a \$41.6 million, and a \$2.6 million reduction in sales within our Video segment in 2023. These decreases were partially offset by an increase in our Broadband segment revenue of \$39.0 million resulting from higher volume from our existing customers including initial shipments on a new project with a large Tier 1 customer in 2023.

EMEA net revenue decreased by \$5.4 million in 2023, as compared to 2022. This decline was primarily attributed to reduced sales, with decreases in our Video and Broadband segments of \$3.4 million and \$2.0 million, respectively. The reduction in sales in both segments was a consequence of lower demand for our products.

APAC net revenue decreased by \$6.5 million in 2023, as compared to 2022, primarily due to a reduction in sales of \$8.2 million in Video segment due to lower demand, partially offset by a \$1.7 million increase in revenue from higher demand in our Broadband segment.

Gross Profit

(in thousands, except percentages)	Year Ended December 31,			2023 vs. 2022	
	2023	2022	2021		
Gross profit	\$ 312,545	\$ 315,884	\$ 259,742	\$ (3,339)	(1)%
as % of total net revenue	51.4 %	50.5 %	51.2 %	0.9 %	
("gross margin")					

Our gross margins are dependent upon, among other factors, the proportion of software sales, product mix, supply chain impacts, customer mix, product introduction costs, price reductions granted to customers and achievement of cost reductions.

Our gross margin increased by 90 basis points (bps) in 2023, as compared to 2022, primarily driven by margin expansion in both our Broadband and Video segments, largely attributed to an increase of 53 bps from lower shipping costs and an increase of 37 bps due to favorable product mix.

Research and Development Expenses

(in thousands, except percentages)	Year Ended December 31,			2023 vs. 2022	
	2023	2022	2021		
Research and development	\$ 126,282	\$ 120,307	\$ 102,231	\$ 5,975	5 %
as % of total net revenue	21 %	19 %	20 %		

Our research and development expenses consist primarily of employee salaries and related expenses, contractors and outside consultants, supplies and materials, equipment depreciation and facilities costs, all of which are associated with the design and development of new products and enhancements of existing products. The research and development expenses are net of French Research and Development (“French R&D”) credits.

Research and development expenses increased in 2023, as compared to 2022, primarily due to higher employee compensation costs as a result of headcount increases to support the growth of our Broadband business.

Selling, General and Administrative Expenses

(in thousands, except percentages)	Year Ended December 31,			2023 vs. 2022	
	2023	2022	2021		
Selling, general and administrative	\$ 163,282	\$ 146,717	\$ 138,085	\$ 16,565	11 %
as % of total net revenue	27 %	23 %	27 %		

Selling, general and administrative expenses increased in 2023, as compared to 2022, primarily due to higher employee compensation costs of \$11.4 million as a result of headcount increases and annual compensation adjustments to support the growth of our Broadband business and non-recurring advisory fees of \$5.2 million incurred for the strategic review of the Video business.

Restructuring and Related Charges

We have implemented several restructuring plans in the past few years. The goal of these plans is to bring operational expenses to appropriate levels relative to our net revenues, while simultaneously implementing extensive company-wide expense control programs. We account for our restructuring plans under the authoritative guidance for exit or disposal activities. The restructuring and related charges are included in “Cost of revenue” and “Operating expenses-restructuring and related charges” in the Consolidated Statements of Operations.

(in thousands, except percentages)	Year Ended December 31,			2023 vs. 2022	
	2023	2022	2021		
Cost of revenue	\$ 687	\$ 533	\$ 571	\$ 154	29 %
Operating expenses					
Restructuring and related charges	809	3,341	110	(2,532)	(76)%
Total restructuring and related charges	\$ 1,496	\$ 3,874	\$ 681	\$ (2,378)	(61)%

Restructuring and related charges decreased in 2023, as compared to 2022, primarily due to higher severance and employee benefit costs recorded in conjunction with restructuring activities in fiscal 2022.

Refer to Note 10, “Restructuring and Related Charges,” of the Notes to our Consolidated Financial Statements for additional information.

Interest Expense, Net

(in thousands, except percentages)	Year Ended December 31,			2023 vs. 2022	
	2023	2022	2021		
Interest expense, net	\$ (2,696)	\$ (5,040)	\$ (10,625)	\$ 2,344	(47)%

Interest expense, net decreased in 2023, as compared to 2022, primarily due to the repayment of the 4.375% Convertible Senior Notes due 2022 upon their maturity.

Other Income (Expense), Net

(in thousands, except percentages)	Year Ended December 31,			2023 vs. 2022	
	2023	2022	2021		
Other income (expense), net	\$ (335)	\$ 4,006	\$ 687	\$ (4,341)	(108)%

The change in other income (expense), net in 2023, as compared to 2022, was primarily due to a gain of \$4.2 million recognized on the sale of our investment in Encoding.com in May 2022. Refer to Note 3, “Investment in Equity Securities,” of the Notes to our Consolidated Financial Statements for details on the sale of investment in Encoding.com.

Income Taxes

(in thousands, except percentages)	Year Ended December 31,			2023 vs. 2022	
	2023	2022	2021		
Provision for (benefit from) income taxes	\$ (64,853)	\$ 16,303	\$ (4,383)	\$ (81,156)	(498)%

The change in provision for (benefit from) income taxes for 2023, as compared to 2022, was primarily due to the release of the valuation allowance against U.S. Federal and certain state deferred tax assets due to improved historical earnings and projected earnings.

Segment Financial Results

(in thousands, except percentages)	Year Ended December 31,					2023 vs. 2022			
	2023	2022	2021						
Video									
Revenue	\$	219,425	\$	274,189	\$	288,507	\$	(54,764)	(20)%
as % of total revenue		36 %		44 %		57 %		(8)%	
Operating income ⁽¹⁾		(8,741)		22,322		28,460		(31,063)	(139)%
Operating margin % ⁽¹⁾		(4)%		8 %		10 %		(12)%	
Broadband									
Revenue	\$	388,482	\$	350,768	\$	218,642	\$	37,714	11 %
as % of total revenue		64 %		56 %		43 %		8 %	
Operating income ⁽¹⁾		64,575		52,283		15,599		12,292	24 %
Operating margin % ⁽¹⁾		17 %		15 %		7 %		2 %	
Total									
Revenue	\$	607,907	\$	624,957	\$	507,149	\$	(17,050)	(3)%

(1) Segment operating income and segment operating margins are Non-GAAP financial measures. Refer to Note 16, "Segment information, Geographic Information and Customer Concentration," of the Notes to our Consolidated Financial Statements for a reconciliation of the Company's consolidated segment operating income to consolidated income before income taxes.

Video

Our Video segment net revenue decreased by \$54.8 million in 2023, as compared to 2022. This decrease was primarily driven by a reduction in appliance and integration revenue of \$68.2 million, partially offset by an increase of \$13.4 million in our SaaS and services revenue. The decrease in appliance and integration revenue was primarily due to a one-time deployment of our appliance products for a customer in 2022, amounting to \$41.6 million, and a \$26.6 million decline in sales across all regions in 2023, primarily due a decline in demand as a result of macroeconomic conditions impacting our customers' capital budgets in 2023. The increase in our SaaS and services revenue was primarily driven by \$10.4 million increase in usage from our existing customers and \$5.8 million increase in revenue from the acquisition of new SaaS customers, partially offset by a \$2.8 million decrease in revenue attributable to lower support services revenue from existing customers. Video segment operating margin decreased in 2023, compared to 2022, primarily due to the decrease in revenue.

Broadband

Our Broadband segment net revenue increased by \$37.7 million in 2023, as compared to 2022, primarily due to a \$30.3 million increase in revenue from higher product sales and a \$7.4 million increase in support services revenue from our existing customers. Our Broadband segment operating margin increased in 2023, compared to 2022, primarily due to lower shipping costs in 2023.

Liquidity and Capital Resources

We expect to continue to manage our cash from operations effectively, together with deploying cash in working capital for growth. The cash we generate from our operations enables us to fund ongoing operations, our research and development projects for new products and technologies, and other business activities. We continually evaluate our cash needs and may decide it is best to raise additional capital or seek alternative financing sources to fund our operations and the growth of our business, to take advantage of unanticipated strategic opportunities, or to strengthen our financial position, including through drawdowns on existing or new debt facilities or new financing (debt and equity) funds. In the future, we may enter into other arrangements for potential investments in, or acquisitions of, complementary businesses, services or technologies, which could require us to seek additional equity or debt financing. Additional funds may not be available on terms favorable to us or at all. Conversely, we may also from time to time determine that it is in our best interests to voluntarily repay certain indebtedness early. We believe that our current sources of funds will provide us with adequate liquidity during the 12-month period following December 31, 2023, as well as in the long-term.

Material Cash Requirements

Our principal uses of cash will include repayments of debt and related interest, purchases of inventory, stock repurchases, payments for payroll, restructuring expenses, and other operating expenses related to the development and marketing of our products, purchases of property and equipment, facility leases, and other contractual obligations for the foreseeable future.

As of December 31, 2023, we had outstanding \$130.9 million in aggregate principal amount of indebtedness, consisting of our 2024 Notes and other debts, of which \$120.4 million is scheduled to become due in the 12-month period following December 31, 2023. As of December 31, 2023, our total minimum lease payments are \$30.7 million, of which \$7.1 million is due in the 12-month period following December 31, 2023. For details regarding our indebtedness and lease obligations, refer to Note 11, “Convertible Notes and Other Debts”, and Note 4, “Leases”, respectively, of the Notes to our Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K.

On February 3, 2022, the Board of Directors authorized us to repurchase, from time to time, up to \$100 million of our outstanding shares of common stock through February 2025, at such time and such prices as management may decide. The program does not obligate us to repurchase any specific number of shares and may be discontinued at any time. As of December 31, 2023, approximately \$94.9 million of the share repurchase authorization remained available.

Sources and Conditions of Liquidity

Our sources to fund our material cash requirements are predominantly from sales of our products and services and, when applicable, proceeds from debt facilities and debt and equity offerings.

As of December 31, 2023, our principal sources of liquidity consisted of cash and cash equivalents of \$84.3 million, net accounts receivable of \$141.5 million, \$30.0 million from our receivables purchase arrangement, \$160.0 million from our new credit agreement, and financing from French government agencies.

Our cash and cash equivalents of \$84.3 million as of December 31, 2023 consisted of bank deposits held throughout the world, of which \$57.3 million was held outside of the United States. At present, such foreign funds are considered to be indefinitely reinvested in foreign countries to the extent of indefinitely reinvested foreign earnings. In the event funds from foreign operations are needed to fund cash needs in the United States and if U.S. taxes have not already been previously accrued, we may be required to accrue and pay additional U.S. and foreign withholding taxes in order to repatriate these funds.

On September 29, 2023, we entered into a Master Receivables Purchase Agreement with JPMorgan Chase Bank N.A. as purchaser. The agreement allows us, from time to time, to sell certain eligible billed receivables in an aggregate outstanding amount of up to \$30 million. As of December 31, 2023, there were no receivables sold under this agreement.

On December 21, 2023, we entered into a Credit Agreement (the “Credit Agreement”), by and among the Company, certain of our subsidiaries from time to time party thereto, the lenders from time to time party thereto, and Citibank, N.A., as administrative agent for the lenders. The Credit Agreement provides for a secured revolving loan facility in an aggregate principal amount of up to \$120.0 million (the “Revolving Facility”), with a \$10.0 million sublimit for the issuance of letters of credit, and a secured delayed draw term loan facility in an aggregate principal amount of up to \$40.0 million (the “Term Facility”). As of December 31, 2023, there were no borrowings outstanding and approximately \$0.2 million of letters of credit outstanding under the Credit Agreement. The Credit Agreement refinances and replaces our prior credit agreement, dated as of December 19, 2019, as amended, with JPMorgan Chase Bank, N.A., as lender. For details regarding our Credit Agreement, refer to Note 11, “Convertible Notes and Other Debts”, of the Notes to our Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K.

Summary of Cash Flows

(in thousands)	Year Ended December 31,		
	2023	2022	2021
Net cash provided by (used in)			
Operating activities	\$ 7,059	\$ 5,476	\$ 41,017
Investing activities	(8,475)	(1,288)	(12,975)
Financing activities	(4,990)	(43,133)	7,939
Effect of exchange rate changes on cash and cash equivalents	1,089	(4,900)	(1,195)
Net increase (decrease) in cash, cash equivalents and restricted cash	<u>\$ (5,317)</u>	<u>\$ (43,845)</u>	<u>\$ 34,786</u>

Operating Activities

Net cash provided by operating activities increased by \$1.6 million in 2023, as compared to 2022, primarily due to a decrease of cash used in our working capital, partially offset by lower income before income taxes.

We expect that cash provided by or used in operating activities may fluctuate in future periods as a result of a number of factors, including but not limited to, instability and uncertainty in the financial services sector; the impact of the Russia-Ukraine and Hamas-Israel conflicts on macroeconomic conditions, which may affect demand for our offerings; fluctuations in our operating results; shipment linearity; accounts receivable collections performance; inventory and supply chain management; and the timing and amount of compensation and other payments.

Investing Activities

Net cash used in investing activities increased by \$7.2 million in 2023, as compared to 2022, primarily due to proceeds from the sale of our investment in Encoding.com in 2022.

Financing Activities

Net cash used in financing activities decreased by \$38.1 million in 2023, as compared to 2022, primarily due to the repayment of the \$37.7 million principal of the 2022 Notes in 2022, and stock repurchase transactions in 2022. The decreases were partially offset by higher payment of tax withholding obligations related to the net share settlement of restricted stock units and payments of debt issuance costs associated with the Credit Agreement.

New Accounting Pronouncements

Refer to Note 2 to the accompanying Consolidated Financial Statements for a full description of recent accounting pronouncements, including the dates of adoption and estimated effects, if any, on results of operations and financial condition.

Item 7A. *QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.*

Foreign Currency Exchange Risk

We market and sell our products and services through our direct sales force and indirect channel partners in North America, EMEA, APAC and Latin America. Accordingly, we are subject to exposure from adverse movements in foreign currency exchange rates, primarily the Euro, British pound, Israeli shekel and Japanese yen. Our U.S. dollar functional subsidiaries account for approximately 97%, 97% and 96% of our consolidated net revenues in 2023, 2022 and 2021, respectively. We recorded net billings denominated in foreign currencies of approximately 15%, 15% and 18% of total company billings in 2023, 2022 and 2021, respectively. In addition, a portion of our operating expenses, primarily the cost of personnel to deliver technical support on our products and professional services, sales and sales support and research and development, are denominated in foreign currencies, primarily the Euro, Israeli shekel and British pound.

We use derivative instruments, primarily forward contracts, to manage exposures to foreign currency exchange rates and we do not enter into foreign currency forward contracts for trading purposes.

Derivatives Not Designated as Hedging Instruments (Balance Sheet Hedges)

We enter into forward currency contracts to hedge foreign currency denominated monetary assets and liabilities. These derivative instruments are marked to market through earnings every period and mature generally within three months. Changes in the fair value of these foreign currency forward contracts are recognized in “Other income (expense), net” in the Consolidated Statements of Operations, and are largely offset by the changes in the fair value of the assets or liabilities being hedged.

The U.S. dollar equivalents of all outstanding notional amounts of foreign currency forward contracts are summarized as follows:

(in thousands)	December 31,	
	2023	2022
Derivatives not designated as hedging instruments:		
Purchase	\$ 54,169	\$ 7,971

Interest Rate Risk

Our exposure to market risk for changes in interest rates relates primarily to our outstanding debt arrangements with variable rate interests as well as our borrowings under the Credit Agreement.

On December 21, 2023, we entered into a Credit Agreement (the “Credit Agreement”), with Citibank, N.A., as administrative agent for the lenders. The Credit Agreement provides for a secured revolving loan facility in an aggregate principal amount of up to \$120.0 million (the “Revolving Facility”), with a \$10.0 million sublimit for the issuance of letters of credit, and a secured delayed draw term loan facility in an aggregate principal amount of up to \$40.0 million (the “Term Facility”). The Credit Agreement refinances and replaces the Company’s existing credit agreement, dated as of December 19, 2019, as amended, with JPMorgan Chase Bank, N.A., as lender.

Loans under the Revolving Facility and Term Facility will bear interest, at the Company’s election, at a floating rate per annum equal to either (a) a base rate, defined as the greatest of (i) the prime rate then in effect, (ii) the federal funds rate then in effect, plus 0.50%, or (iii) an adjusted term SOFR rate determined on the basis of a one-month interest period, plus 1.00%, in each case, plus a margin of between 1.00% to 1.75% (“Base Rate Loans”); and (b) an adjusted term SOFR rate (based on one, three or six month interest periods), plus a margin of between 2.00% to 2.75% (“Adjusted Term SOFR Loans”). The applicable margin in each case is determined based on the Company’s consolidated net leverage ratio. Interest is payable quarterly in arrears, in the case of Base Rate Loans, and at the end of the applicable interest period, but at least every three months, in the case of Adjusted Term SOFR Loans. The Company is also obligated to pay other customary fees (including letter of credit fees) for a credit agreement of this size and type. We had no borrowings under the Credit Agreement from the closing of the Credit Agreement through December 31, 2023.

For our French entity, the aggregate debt balance at December 31, 2023 was \$15.4 million, which are financed by French government agencies. These debt instruments have maturities ranging from one to five years, expiring from 2024 through 2026. These loans are tied to the 1-month EURIBOR rate plus spread. Refer to Note 11, “Convertible Notes and Other Debts,” of the Notes to our Consolidated Financial Statements for additional information. As of December 31, 2023, a hypothetical 1.0% increase in interest rates on our debts subject to variable interest rate fluctuations would increase our interest expense by approximately \$0.1 million annually.

As of December 31, 2023, we had \$115.5 million aggregate principal of the 2024 Notes outstanding, which have a fixed 2.00% coupon rate. Additionally, during fiscal 2020, we received a loan from Société Générale S.A. in France which bears an effective interest rate of 0.51% per annum, in connection with relief loan programs related to the COVID-19 pandemic. As of December 31, 2023, the outstanding balance of this loan was \$4.1 million.

Item 8. ***FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA***

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Harmonic Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Harmonic Inc. (the Company) as of December 31, 2023 and 2022, the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2023, 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 financial position of the Company at December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 16, 2024, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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

Inventory Valuation

Description of the Matter

The Company's net inventory totaled \$84 million as of December 31, 2023. As explained in "Note 2: Accounting Policies" within the consolidated financial statements, inventory is stated at the lower of cost (determined on a first-in, first-out basis) or net realizable value. The Company establishes a provision for excess and obsolete inventory to reduce such inventory to its estimated net realizable value.

Auditing management's estimates for excess and obsolete inventory involved auditor judgment due to the assessment of management's estimates of whether a provision for excess and obsolete inventory is required. The measurement of any excess of cost over net realizable value is judgmental and is impacted by a number of factors that are affected by general economic and market conditions outside the Company's control. Specifically, excess and obsolete inventory calculations are sensitive to assumptions that relate to future customer demand for the Company's products.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls over the Company's excess and obsolete inventory reserve process. This included controls over management's determination of inventory valuation, including the evaluation of future demand of the Company's products and the completeness and accuracy of the data underlying the excess and obsolete inventory valuation.

We performed audit procedures that included, among others, assessing the Company's methodology over the computation of the provision for excess and obsolete inventory, testing the significant assumptions and the underlying inputs used by the Company in its analysis including historical sales trends, expectations regarding future demand, changes in the Company's business, customer base, product life cycles and other relevant factors. We evaluated current inventory levels compared to future demand and historical sales.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2021.

San Jose, California

February 16, 2024

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Harmonic Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Harmonic Inc.'s internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Harmonic Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the 2023 Consolidated Financial Statements of the Company and our report dated February 16, 2024 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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.

/s/ Ernst & Young LLP

San Jose, California
February 16, 2024

HARMONIC INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except par value)

	December 31,	
	2023	2022
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 84,269	\$ 89,586
Accounts receivable, net	141,531	108,427
Inventories	83,982	120,949
Prepaid expenses and other current assets	20,950	26,337
Total current assets	330,732	345,299
Property and equipment, net	36,683	39,814
Operating lease right-of-use assets, net	20,817	25,469
Goodwill	239,150	237,739
Deferred income taxes	104,707	11,776
Other non-current assets	36,117	49,921
Total assets	\$ 768,206	\$ 710,018
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Convertible debt, current	\$ 114,880	\$ 113,981
Other debts, current	4,918	4,756
Accounts payable	38,562	67,455
Deferred revenue	46,217	62,383
Operating lease liabilities, current	6,793	6,773
Other current liabilities	61,024	66,724
Total current liabilities	272,394	322,072
Other debts, non-current	10,495	11,161
Operating lease liabilities, non-current	18,965	24,110
Other non-current liabilities	29,478	28,169
Total liabilities	331,332	385,512
Commitments and contingencies (Note 17)		
Stockholders' equity:		
Preferred stock, \$0.001 par value, 5,000 shares authorized; no shares issued or outstanding	—	—
Common stock, \$0.001 par value, 150,000 shares authorized; 112,407 and 109,871 shares issued and outstanding at December 31, 2023 and 2022, respectively	112	110
Additional paid-in capital	2,405,043	2,380,651
Accumulated deficit	(1,962,575)	(2,046,569)
Accumulated other comprehensive loss	(5,706)	(9,686)
Total stockholders' equity	436,874	324,506
Total liabilities and stockholders' equity	\$ 768,206	\$ 710,018

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

HARMONIC INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	Year Ended December 31,		
	2023	2022	2021
Revenue:			
Appliance and integration	\$ 435,878	\$ 473,806	\$ 369,767
SaaS and service	172,029	151,151	137,382
Total net revenue	607,907	624,957	507,149
Cost of revenue:			
Appliance and integration	236,773	259,027	195,445
SaaS and service	58,589	50,046	51,962
Total cost of revenue	295,362	309,073	247,407
Total gross profit	312,545	315,884	259,742
Operating expenses:			
Research and development	126,282	120,307	102,231
Selling, general and administrative	163,282	146,717	138,085
Amortization of intangibles	—	—	507
Restructuring and related charges	809	3,341	110
Total operating expenses	290,373	270,365	240,933
Income from operations	22,172	45,519	18,809
Interest expense, net	(2,696)	(5,040)	(10,625)
Other income (expense), net	(335)	4,006	687
Income before income taxes	19,141	44,485	8,871
Provision for (benefit from) income taxes	(64,853)	16,303	(4,383)
Net income	\$ 83,994	\$ 28,182	\$ 13,254
Net income per share:			
Basic	\$ 0.75	\$ 0.27	\$ 0.13
Diluted	\$ 0.72	\$ 0.25	\$ 0.12
Weighted average common shares:			
Basic	111,651	105,080	101,484
Diluted	117,359	112,378	106,171

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

HARMONIC INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	Year Ended December 31,		
	2023	2022	2021
Net income	\$ 83,994	\$ 28,182	\$ 13,254
Other comprehensive income (loss):			
Defined benefit plan	25	626	(233)
Translation gain (loss)	3,806	(6,956)	(8,022)
Other comprehensive income (loss) before tax	3,831	(6,330)	(8,255)
Provision for (benefit from) income taxes	(149)	84	873
Other comprehensive income (loss), net of tax	3,980	(6,414)	(9,128)
Total comprehensive income	<u>\$ 87,974</u>	<u>\$ 21,768</u>	<u>\$ 4,126</u>

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

HARMONIC INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2020	98,204	\$ 98	\$ 2,353,559	\$ (2,101,211)	\$ 5,856	\$ 258,302
Net income	—	—	—	13,254	—	13,254
Other comprehensive loss, net of tax	—	—	—	—	(9,128)	(9,128)
Issuance of common stock under stock option, award and purchase plans	4,755	5	10,244	—	—	10,249
Stock-based compensation	—	—	24,119	—	—	24,119
Reclassification from equity to mezzanine equity for 2022 Notes	—	—	(883)	—	—	(883)
Balance at December 31, 2021	102,959	\$ 103	\$ 2,387,039	\$ (2,087,957)	\$ (3,272)	\$ 295,913
Cumulative effect of ASU 2020-06 adoption	—	—	(32,249)	18,339	—	(13,910)
Balance at January 1, 2022	102,959	103	2,354,790	(2,069,618)	(3,272)	282,003
Net income	—	—	—	28,182	—	28,182
Other comprehensive loss, net of tax	—	—	—	—	(6,414)	(6,414)
Issuance of common stock under stock option, award and purchase plans, net	3,601	4	787	—	—	791
Repurchase of common stock	(571)	(1)	—	(5,133)	—	(5,134)
Stock-based compensation	—	—	25,078	—	—	25,078
Issuance of common stock upon conversion of 2022 Notes	3,882	4	(4)	—	—	—
Balance at December 31, 2022	109,871	\$ 110	\$ 2,380,651	\$ (2,046,569)	\$ (9,686)	\$ 324,506
Net income	—	—	—	83,994	—	83,994
Other comprehensive income, net of tax	—	—	—	—	3,980	3,980
Issuance of common stock under stock award and purchase plans	2,536	2	(2,937)	—	—	(2,935)
Stock-based compensation	—	—	27,329	—	—	27,329
Balance at December 31, 2023	112,407	\$ 112	\$ 2,405,043	\$ (1,962,575)	\$ (5,706)	\$ 436,874

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

HARMONIC INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2023	2022	2021
Cash flows from operating activities:			
Net income	\$ 83,994	\$ 28,182	\$ 13,254
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	12,255	12,260	12,546
Amortization of intangibles	—	—	507
Stock-based compensation	27,329	25,212	24,056
Amortization of convertible debt discount	899	1,171	6,308
Amortization of warrant	870	1,734	1,741
Foreign currency remeasurement	1,453	(2,685)	(5,126)
Deferred income taxes, net	(92,856)	4,894	(6,197)
Provision for expected credit losses and returns	2,778	1,954	4,142
Provision for excess and obsolete inventories	7,396	5,988	3,460
Gain on sale of investment in equity securities	—	(4,370)	—
Other adjustments	151	513	181
Changes in operating assets and liabilities:			
Accounts receivable	(35,473)	(23,136)	(26,722)
Inventories	35,403	(54,431)	(39,338)
Other assets	25,483	(8,402)	(3,096)
Accounts payable	(29,358)	5,837	42,303
Deferred revenues	(20,823)	2,610	15,014
Other liabilities	(12,442)	8,145	(2,016)
Net cash provided by operating activities	7,059	5,476	41,017
Cash flows from investing activities:			
Purchases of investments	(6,305)	—	—
Proceeds from maturities of investments	6,305	—	—
Proceeds from sales of equity investments	—	7,962	—
Purchases of property and equipment	(8,475)	(9,250)	(12,975)
Net cash used in investing activities	(8,475)	(1,288)	(12,975)
Cash flows from financing activities:			
Payment of convertible debt	—	(37,707)	—
Payments for debt issuance costs	(1,025)	—	—
Proceeds from other debts	3,835	3,499	3,861
Repayment of other debts	(4,865)	(4,583)	(6,169)
Repurchase of common stock	—	(5,133)	—
Proceeds from common stock issued to employees	6,558	7,092	12,311
Taxes paid related to net share settlement of equity awards	(9,493)	(6,301)	(2,064)
Net cash provided by (used in) financing activities	(4,990)	(43,133)	7,939
Effect of exchange rate changes on cash and cash equivalents	1,089	(4,900)	(1,195)
Net increase (decrease) in cash and cash equivalents	(5,317)	(43,845)	34,786
Cash and cash equivalents, beginning of the year	89,586	133,431	98,645
Cash and cash equivalents, end of the year	\$ 84,269	\$ 89,586	\$ 133,431
Supplemental disclosure of cash flow information:			
Income tax payments, net	\$ 18,128	\$ 9,036	\$ 2,525
Interest payments, net	\$ 1,626	\$ 3,796	\$ 4,095
Supplemental schedule of non-cash investing and financing activities:			
Capital expenditures incurred but not yet paid	\$ 618	\$ 1,075	\$ 751

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

HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1: DESCRIPTION OF BUSINESS

Harmonic Inc. (“Harmonic” or the “Company”) is a leading global provider of (i) broadband access solutions that enable broadband operators to more efficiently and effectively deploy high-speed internet, for data, voice and video services for their customers and (ii) versatile and high performance video delivery software, products, system solutions and services that enable our customers to efficiently create, prepare, store, playout and deliver a full range of high-quality broadcast and streaming video services to consumer devices, including televisions, personal computers, laptops, tablets and smart phones

The Company operates in two segments, Broadband and Video. The Broadband business sells broadband access solutions and related services, including our cOS software-based broadband access solution, to broadband operators globally. The Video business sells video processing and production and playout solutions and services worldwide to broadband operators and satellite and telecommunications (“telco”) pay-TV service providers, which are collectively referred to as “service providers,” and to broadcast and media companies, including streaming media companies. The Video business infrastructure solutions are delivered either through shipment of our products, software licenses or as software-as-a-service (“SaaS”) subscriptions.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying consolidated financial statements include those of Harmonic and its wholly-owned subsidiaries, after elimination of all intercompany accounts and transactions. The Company has reclassified certain amounts previously reported in its consolidated financial statements that were not material, to conform to the current presentation. The Company’s fiscal quarters are based on 13-week periods, except for the fourth quarter which ends on December 31.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles (“US GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. The Company’s reported financial positions or results of operations may be materially different under changed conditions or when using different estimates and assumptions, particularly with respect to significant accounting policies. If estimates or assumptions differ from actual results, subsequent periods are adjusted to reflect more current information.

Cash and Cash Equivalents

All highly liquid investments with an original maturity of three months or less at the date of purchase are considered cash equivalents. The carrying amount of cash and cash equivalents approximates fair value because of the short maturity of those instruments.

Credit Risk and Major Customers/Supplier Concentration

Financial instruments which subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents, and accounts receivable. Cash and cash equivalents are invested in short-term, highly liquid, investment-grade instruments, in accordance with the Company’s investment policy. The investment policy limits the amount of credit exposure to any one financial institution, commercial or governmental issuer.

The Company’s accounts receivable are derived from sales to worldwide cable, satellite, telco, and broadcast and media companies. The Company generally does not require collateral from its customers, and performs ongoing credit evaluations of its customers and provides for expected losses. The Company maintains an allowance for doubtful accounts based upon the expected collectability of its accounts receivable. Two customers had a balance greater than 10% of the Company’s net accounts receivable balance as of December 31, 2023. One customer had a balance greater than 10% of the Company’s net accounts receivable balance as of December 31, 2022. During the year ended December 31, 2023, 2022 and 2021, Comcast is the only customer that accounted for more than 10% of the Company’s total net revenue.

Certain of the components and subassemblies included in the Company’s products are obtained from a single source or a limited group of suppliers. Although the Company seeks to reduce dependence on those sole source and limited source suppliers, the partial or complete loss of certain of these sources could have at least a temporary adverse effect on the Company’s results of operations and damage customer relationships.

Revenue Recognition

The Company classifies its total revenue in two categories on the face of the statement of operations, “Appliance and integration” and “SaaS and service. Appliance and integration revenue includes revenue from the sale of hardware products and perpetual software licenses, as well as the associated professional services such as testing, design, installation, commissioning, and integration, collectively referred to as “professional services. These professional service agreements, associated with the sale of hardware products and perpetual software licenses, are typically of a short duration and are considered an important component of the appliance business by management. SaaS and service revenue include usage fees for the Company’s SaaS platform and support service revenue from its appliance-based customers.

The Company applies the provisions of ASC 606, Revenue from Contracts with Customers (ASC 606) as a single standard for revenue recognition that applies to all of its hardware products, software licenses and services arrangements and generally require revenues to be recognized upon the transfer of control of promised goods or services provided to its customers, reflecting the amount of consideration the Company expects to receive for those goods or services. Pursuant to ASC 606, revenue is recognized upon the application of the following steps:

- identification of the contract, or contracts, with a customer;
- identification of the performance obligations in the contract;
- determination of the transaction price;
- allocation of the transaction price to each performance obligation in the contract; and
- recognition of revenues when, or as, the contractual performance obligations are satisfied.

Hardware and Software: Revenue from the sale of hardware and software products is recognized when control is transferred. For most of the Company’s product sales (including sales to distributors and system integrators), control is transferred at the time the product is shipped or delivery has occurred because the customer has significant risks and rewards of ownership of the asset and the Company has a present right to payment at that time. The Company’s agreements with the distributors and system integrators have terms which are generally consistent with the standard terms and conditions for the sale of the Company’s equipment to end users, and do not provide for product rotation or pricing allowances, as are typically found in agreements with stocking distributors.

Shipping and handling costs are accounted for as a fulfillment cost and are recorded in “Cost of revenue” in the Company’s Consolidated Statements of Operations. Sales tax and other amounts collected on behalf of third parties are excluded from the transaction price.

Professional services: Revenues from professional services are generally recognized as the services are performed.

SaaS services: Revenue for SaaS service is recognized ratably over the contractual term as the customer simultaneously receives and consumes the benefit of the underlying service. Over-usage fees are recognized as revenue when consumed and are included in the transaction price of an arrangement as variable consideration.

Support and maintenance. Support and maintenance services are satisfied ratably over time as the customer simultaneously receives and consumes the benefits of the services.

Arrangements with Multiple Performance Obligations. The Company has revenue arrangements that include multiple performance obligations. The Company allocates the transaction price to all distinct performance obligations based on their relative standalone selling prices (“SSP”). The Company may exercise judgment when determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together. The determination of SSP is generally based on the contractually stated, observable prices of the promised goods and services charged when sold separately to the customer. Where SSP is not directly observable, we determine the SSP using information which considers multiple factors including, but not limited to, major product groupings, gross margin objectives and pricing practices. Pricing practices taken into consideration include discounts offered and applicable price lists.

Contract Balances. Deferred revenue represents the Company’s obligation to transfer goods or services to a customer for which the Company has received consideration (or an amount of consideration is due) from the customer. The Company’s payment terms vary by the type and location of its customer and the products or services offered. The term between invoicing and when payment is due is not significant. For certain products or services and customer types, the Company requires payment before the products or services are delivered to the customer.

The amount of revenues recognized during the years ended December 31, 2023 and 2022 that were included in the opening deferred revenue balance as of January 1, 2023 and 2022, respectively, were \$54.1 million and \$47.9 million.

Contract assets exist when the Company has satisfied a performance obligation but does not have an unconditional right to consideration (e.g., because the entity first must satisfy another performance obligation in the contract before it is entitled to invoice the customer).

Contract assets and deferred revenue consisted of the following:

(in thousands)	As of December 31,	
	2023	2022
Contract assets	\$ 4,772	\$ 5,580
Deferred revenue	\$ 59,705	\$ 80,471

Contract assets and the non-current portion of deferred revenue are reported as components of “Prepaid expenses and other current assets” and “Other non-current liabilities”, respectively, on the Consolidated Balance Sheets.

Remaining performance obligations represent contracted revenues that had not yet been recognized and future revenue recognition is expected. The aggregate balance of the Company’s remaining performance obligations as of December 31, 2023, was \$653.2 million, of which approximately 51% is expected to be recognized as revenue over the next 12 months and the remainder thereafter.

Contract costs. The incremental costs of obtaining a contract are capitalized if the costs are expected to be recovered. Costs that are recognized as assets are amortized on a straight-line basis over the period during which the related goods or services transfer to the customer. Costs incurred to fulfill a contract are capitalized if they are not covered by other relevant guidance, relate directly to a contract, will be used to satisfy future performance obligations, and are expected to be recovered.

The balances of net capitalized contract costs included in the Company’s Consolidated Balance Sheets were as follows:

(in thousands)	As of December 31,	
	2023	2022
Balance Sheet Location		
Prepaid expenses and other current assets	\$ 1,879	\$ 1,766
Other non-current assets	1,944	1,337
Total net capitalized contract costs	\$ 3,823	\$ 3,103

The amortization of the capitalized contract costs for the years ended December 31, 2023, 2022 and 2021 was \$2.3 million, \$2.2 million and \$2.3 million, respectively.

Refer to Note 16, “Segment Information, Geographic Information and Customer Concentration” for disaggregated revenue information.

Inventories

Inventories are stated at the lower of cost (determined on first-in, first-out basis) or net realizable value. The cost of inventories is comprised of material and manufacturing labor and overheads. The Company establishes provisions for excess and obsolete inventories to reduce such inventories to their estimated net realizable value after evaluation of historical sales, future demand and market conditions, expected product life cycles and current inventory levels. Such provisions are charged to cost of revenue in the Company’s Consolidated Statements of Operations.

Property and Equipment

Property and equipment are recorded at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. Estimated useful lives are generally five years for furniture and fixtures, three years for software and four years for machinery and equipment. Depreciation for leasehold improvements are computed using the shorter of estimated useful lives or the terms of the related leases. The Company reviews property and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. For the years ended December 31, 2023, 2022 and 2021, there were no impairment charges for property and equipment.

Goodwill

Goodwill is assigned to one or more reporting segments on the date of acquisition. We review our goodwill for impairment annually during our fourth quarter of each fiscal year and between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of any one of our reporting units below its respective carrying amount. The Company monitors changing business conditions as well as industry and economic factors, among others, for events which could trigger the need for an interim impairment analysis. In performing our goodwill impairment test, we first perform a qualitative assessment, which requires that we consider events or circumstances including macroeconomic conditions, industry and market considerations, cost factors, overall financial performance, changes in management or key personnel, changes in strategy, changes in customers, changes in the composition or carrying amount of a reporting segment’s net assets and changes in our stock price. If, after assessing the totality of events or circumstances, we determine that it is more likely than not that the fair values of our reporting segments are greater than the carrying amounts, then the quantitative goodwill impairment test is not performed.

If the qualitative assessment indicates that the quantitative analysis should be performed, we then evaluate goodwill for impairment by comparing the fair value of each of our reporting segments to its carrying value, including the associated goodwill. To determine the fair values, we use the market approach based on comparable publicly traded companies in similar lines of businesses and the income approach based on estimated discounted future cash flows. Our cash flow assumptions consider historical and forecasted revenue, operating costs and other relevant factors.

We completed our annual goodwill impairment test in the fourth quarter of fiscal 2023. We determined, after performing a qualitative review of each reporting segment, that it is more likely than not that the fair value of each of our reporting segments exceeds the respective carrying amounts. Accordingly, there was no indication of impairment and the quantitative goodwill impairment test was not performed. For the years ended December 31, 2023, 2022 and 2021, there were no impairment charges for goodwill.

Leases

The Company determines if an arrangement is a lease at inception. Operating lease liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. The Company's lease contracts do not provide an implicit borrowing rate; hence the Company determined the incremental borrowing rate based on information available at lease commencement to determine the present value of lease liability. Right-of-use ("ROU") assets related to our operating lease liabilities are measured at lease inception based on the initial measurement of the lease liability, plus any prepaid lease payments and less any lease incentives. As of December 31, 2023, the Company has operating leases primarily consisting of facilities with remaining lease terms of 1 year to 9 years, some of which included the option to extend the term. Optional periods to extend the lease, including by not exercising a termination option, are included in the lease term when it is reasonably certain that the option will be exercised. The Company amortizes ROU assets as operating lease expense on a straight-line basis over the lease term. Operating leases are included in "Operating lease right-of-use assets", "Operating lease liabilities, current", and "operating lease liabilities, non-current" in the Consolidated Balance Sheets.

Foreign Currency

The functional currency of the Company's Israeli and Swiss subsidiaries is the U.S. dollar. All other foreign subsidiaries use the respective local currency as the functional currency. When the local currency is the functional currency, gains and losses from translation of these foreign currency financial statements into U.S. dollars are recorded as a separate component of other comprehensive income (loss) in stockholders' equity.

The Company's foreign currency exposure is also related to its net position of monetary assets and monetary liabilities held by its foreign subsidiaries in their nonfunctional currencies. These monetary assets and liabilities are being remeasured into the subsidiaries' respective functional currencies using exchange rates as of the balance sheet date. Such remeasurement gains and losses are included in "Other income (expense), net" in the Company's Consolidated Statements of Operations. During the years ended December 31, 2023, and 2022, the Company recorded remeasurement loss of approximately \$0.2 million and \$0.3 million, respectively. During the year ended December 31, 2021, the Company recorded a remeasurement gain of \$0.6 million.

Derivative Instruments

The Company enters into derivative instruments, primarily foreign currency forward contracts, to minimize the short-term impact of foreign currency exchange rate fluctuations on certain foreign currency denominated assets and liabilities as well as certain foreign currencies denominated expenses. The Company does not enter into derivative instruments for trading purposes and these derivatives generally have maturities within three months.

The derivative instruments are recorded at fair value in prepaid expenses and other current assets or accrued and other current liabilities in the Company's Consolidated Balance Sheets. The Company enters into derivative instruments to hedge existing foreign currency denominated assets or liabilities, the gains or losses on these hedges are recorded immediately in earnings to offset the changes in the fair value of the assets or liabilities being hedged.

Research and Development

Research and development ("R&D") costs are expensed as incurred and consist primarily of employee salaries and related expenses, contractors and outside consultants, supplies and materials, equipment depreciation and facilities costs, all associated with the design and development of new products and enhancements of existing products.

The Company's French subsidiary participates in the French Crédit d'Impôt Recherche ("CIR") program which allows companies to monetize eligible research expenses. The R&D credits receivable from the French government for spending on innovative R&D under the CIR program are recorded as an offset to R&D expenses. In the years ended December 31, 2023, 2022 and 2021, the Company had R&D credits of \$6.2 million, \$5.4 million and \$5.7 million, respectively.

Restructuring and Related Charges

The Company's restructuring charges consist primarily of employee severance, one-time termination benefits related to the reduction of its workforce, and other costs. Liabilities for costs associated with a restructuring activity are recognized when the liability is incurred and are measured at fair value. One-time termination benefits are expensed at the date the entity notifies the employee, unless the employee must provide future service, in which case the benefits are expensed ratably over the future service period. Termination benefits are calculated based on regional benefit practices and local statutory requirements.

Warranty

The Company accrues for estimated warranty costs at the time of revenue recognition and records such accrued liabilities as part of cost of revenue. Management periodically reviews its warranty liability and adjusts the accrued liability based on the terms of warranties provided to customers, historical and anticipated warranty claims experience, and estimates of the timing and cost of warranty claims.

Advertising Expenses

All advertising costs are expensed as incurred and included in "Selling, general and administrative expenses" in the Company's Consolidated Statements of Operations. Advertising expense was \$0.5 million, \$0.7 million and \$1.0 million for the years ended December 31, 2023, 2022 and 2021, respectively.

Stock-based Compensation

The Company measures and recognizes compensation expense for all stock-based compensation awards made to employees, including stock options, restricted stock units ("RSUs") and stock purchase rights under the Company's Employee Stock Purchase Plan ("ESPP"), based upon the grant-date fair value of those awards. The Company recognizes the impact of forfeitures as they occur.

The fair value of the Company's stock options and stock purchase rights under ESPP is estimated at grant date using the Black-Scholes option pricing model. The fair value of the Company's RSUs and performance-based RSUs ("PRSUs") is calculated based on the market value of the Company's stock at the grant date. The fair value of the Company's market-based RSUs ("MRSUs") is estimated using the Monte-Carlo valuation model with market vesting conditions.

The Company recognizes the stock-based compensation for options, RSUs, MRSUs and stock purchase rights under ESPP on straight-line basis over the requisite service period, which is generally the vesting period. The Company recognizes the stock-based compensation for PRSUs based on the probability of achieving performance criteria defined in the PRSU agreements. The Company estimates the number of PRSUs ultimately expected to vest and recognizes expense using the graded vesting attribution method over the requisite service period. Changes in the estimates related to probability of achieving certain performance criteria and number of PRSUs expected to vest could significantly affect the related stock-based compensation expense from one period to the next.

Pension Plan

Under French law, the Company's subsidiary in France is obligated to provide for a defined benefit plan to its employees upon their retirement from the Company. The Company's defined benefit pension plan in France is unfunded.

The Company records its obligations relating to the pension plans based on calculations which include various actuarial assumptions including employees' age and period of service with the company; projected mortality rates, mobility rates and increases in salaries; and a discount rate. The Company reviews its actuarial assumptions on an annual basis as of December 31 (or more frequently if a significant event requiring remeasurement occurs) and modifies the assumptions based on current rates and trends when it is appropriate to do so. The effect of modifications to those assumptions is recorded in other comprehensive income (loss) and amortized to net periodic benefit cost over the expected remaining period of service of the covered employees using the corridor method. The Company believes that the assumptions utilized in recording its obligations under its pension plan are reasonable based on its experience, market conditions and input from its actuaries.

Income Taxes

The Company accounts for income taxes using the asset and liability method of accounting for income taxes. The Company calculates and provides for income taxes in each of the tax jurisdictions in which it operates. The deferred tax assets and liabilities are recognized for future tax consequences attributable to temporary differences between the financial statement carrying values of existing assets and liabilities and their respective tax bases and all operating losses carried forward, if any. Deferred tax assets and liabilities are measured using tax rates expected to apply to taxable income in the years in which the applicable temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates or tax status is recognized in the statements of income in the period in which the change is identified. Deferred tax assets are reduced by a valuation allowance if, based on available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized.

The Company is subject to examination of its income tax returns by various tax authorities on a periodic basis. The Company regularly assesses the likelihood of adverse outcomes resulting from such examinations to determine the adequacy of its provision for income taxes. The Company has applied the provisions of the applicable accounting guidance on accounting for uncertainty in income taxes, which requires application of a more-likely-than-not threshold to the recognition and de-recognition of uncertain tax positions. If the recognition threshold is met, the applicable accounting guidance permits the Company to recognize a tax benefit measured at the largest amount of tax benefit that, in the Company's judgment, is more than 50% likely to be realized upon settlement. It further requires that a change in judgment related to the expected ultimate resolution of uncertain tax positions be recognized in earnings in the period of such change.

The Company files annual income tax returns in multiple taxing jurisdictions around the world. A number of years may elapse before an uncertain tax position is audited and finally resolved. While it is often difficult to predict the final outcome or the timing of resolution of any particular uncertain tax position, the Company believes that its reserves for income taxes reflect the most likely outcome. The Company adjusts these reserves and penalties, as well as the related interest, in light of changing facts and circumstances. Changes in the Company's assessment of its uncertain tax positions or settlement of any particular position could materially and adversely impact the Company's income tax rate, operating results, financial position and cash flows.

Recently Adopted Accounting Pronouncements

In August 2020, the Financial Accounting Standards Board ("FASB") issued Accounting Standard Update ("ASU") No. 2020-06, Accounting for Convertible Instruments in an Entity's Own Equity, which simplifies the accounting for convertible instruments and contracts on an entity's own equity. The Company adopted ASU 2020-06 effective on January 1, 2022, using the modified retrospective method. Among other changes, ASU 2020-06 removes from U.S. GAAP the liability and equity separation model for convertible instruments with a cash conversion feature. As a result, the Company no longer separately presents in equity an embedded conversion feature for such debt. Similarly, the embedded conversion feature is no longer amortized into consolidated statement of operations as interest expense over the life of the instrument. The cumulative effect of the ASU adoption was as follows:

<i>(in thousands)</i>	Balance at December 31, 2021	Adjustments from Adoption of ASU 2020-06	Balance at January 1, 2022
Liabilities			
Convertible debt, current	\$ 36,824	\$ 626	\$ 37,450
Convertible debt, non-current	98,941	14,167	113,108
Mezzanine equity			
Convertible debt	883	(883)	—
Equity			
Additional paid-capital	2,387,039	(32,249)	2,354,790
Accumulated deficit	(2,087,975)	18,339	(2,069,618)

The Company was contractually required to settle the principal amount of the 2022 Notes and is contractually required to settle the principal amount of the 2024 Notes, in cash, and the 2022 Notes were settled in December 2022 upon maturity. Accordingly, the dilutive effect of the Company's 2022 Notes was, and the diluted effect of the 2024 Notes will be, limited to the conversion premium.

From time to time, new accounting pronouncements are issued by the FASB, or other standards setting bodies, that are adopted by the Company as of the specified effective date. Unless otherwise discussed, the Company believes the impact of recently issued standards that are not yet effective will not have a material impact on its consolidated financial position, results of operations and cash flows upon adoption.

Recently Issued Accounting Pronouncement

In November 2023, the FASB issued ASU No. 2023-07, Segment Reporting, which expands annual and interim disclosure requirements for reportable segments, primarily through enhanced disclosures about significant segment expenses. The updated standard is effective for our annual periods beginning in fiscal 2024 and interim periods beginning in the first quarter of fiscal 2025. Early adoption is permitted. The Company is currently evaluating the impact the new accounting standard will have on its segment reporting disclosures in the notes to the consolidated financial statements.

In December 2023, the FASB issued ASU No. 2023-09, Improvements to Income Tax Disclosures. This ASU requires disaggregated information about a reporting entity's effective tax rate reconciliation as well as additional information on income taxes paid. The ASU is effective on a prospective basis for annual periods beginning after December 15, 2024. Early adoption is also permitted for annual financial statements that have not yet been issued or made available for issuance. This ASU will result in the required additional disclosures being included in our consolidated financial statements, once adopted.

NOTE 3: INVESTMENTS IN EQUITY SECURITIES

In May 2022, the Company sold its investment in Encoding.com, Inc. for total consideration of up to approximately \$10.7 million. The Company received \$7.8 million in May 2022 and recognized a gain of \$4.2 million. The balance of the consideration of up to approximately \$2.9 million is subject to certain conditions and indemnity obligations, and will be recorded upon receipt by the Company.

NOTE 4. LEASES

The components of lease expense are as follows:

	Year Ended December 31,	
	2023	2022
(in thousands)		
Operating lease cost	\$ 7,116	\$ 7,636
Variable lease cost	1,813	1,780
Total lease cost	\$ 8,929	\$ 9,416

Supplemental cash flow information related to leases are as follows:

	Year Ended December 31,	
	2023	2022
(in thousands)		
Cash paid for amounts included in the measurement of operating lease liabilities	\$ 6,970	\$ 7,528
Right-of-use assets obtained in exchange for operating lease obligations	\$ —	\$ 862

Other information related to leases are as follows:

	Year Ended December 31,	
	2023	2022
Operating leases		
Weighted-average remaining lease term (years)	5.5	6.2
Weighted-average discount rate	6.4 %	6.3 %

Future minimum lease payments under non-cancelable operating leases as of December 31, 2023 are as follows (in thousands):

Years ending December 31,	
2024	\$ 7,121
2025	5,940
2026	4,921
2027	3,805
2028	3,139
Thereafter	5,747
Total future minimum lease payments	\$ 30,673
Less: imputed interest	(4,915)
Total lease liability balance	\$ 25,758

NOTE 5: DERIVATIVES AND HEDGING ACTIVITIES

Derivatives Not Designated as Hedging Instruments (Balance Sheet Hedges)

The Company transacts business in various foreign currencies and has established a program that primarily utilizes foreign currency forward contracts to offset the risks associated with the effects of certain foreign currency exposures. Under this program, the Company's strategy is to enter into foreign currency forward contracts so that increases or decreases in its foreign currency exposures are offset by gains or losses on the foreign currency forward contracts in order to mitigate the risks and volatility associated with its foreign currency transactions. The Company may suspend this program from time to time. The Company's foreign currency exposures typically arise from foreign currency exchange rate fluctuation on cash and certain trade and intercompany receivables and payables. The Company's foreign currency forward contracts are generally short-term in duration.

The Company does not designate these forward contracts as hedging instruments pursuant to ASC 815, *Derivatives and Hedging*. Accordingly, changes in the fair value of these foreign currency forward contracts are recognized in "Other expense, net" in the Consolidated Statements of Operations and are largely offset by the changes in the fair value of the assets or liabilities being hedged. The balance sheet classification for the fair value of these forward contracts is other current assets for forward contracts in an unrealized gain position and other current liabilities for forward contracts in an unrealized loss position. Foreign currency forward contracts' losses recognized during the year ended December 31, 2023 were \$0.2 million. Foreign currency forward contracts' gains recognized during the years ended December 31, 2022 and 2021, were \$0.3 million and \$0.7 million, respectively.

The U.S. dollar equivalents of all outstanding notional amounts of foreign currency forward contracts were as follows:

(in thousands)	As of December 31,	
	2023	2022
Purchase	\$ 54,169	\$ 7,971

While the Company's arrangements with its counterparties allow for net settlement, which is designed to reduce credit risk by permitting net settlement with the same counterparty, the Company recognizes all derivative instruments in the Consolidated Balance Sheets on a gross basis. As of December 31, 2023, gross fair values of derivative assets and liabilities, recorded as components of "Prepaid expenses and other current assets" and "Other current liabilities" were \$0.2 million and \$0.4 million, respectively, in the Consolidated Balance Sheets. Gross fair values of derivative assets and liabilities as of December 31, 2022 were immaterial.

In connection with foreign currency derivatives entered in Israel, the Company's subsidiaries in Israel are required to maintain a compensating balance with their bank at the end of each month. The compensating balance arrangements do not legally restrict the use of cash. As of December 31, 2023 and 2022, the total compensating balance maintained was \$1.0 million.

NOTE 6: FAIR VALUE MEASUREMENTS

The applicable accounting guidance establishes a framework for measuring fair value and requires disclosure about the fair value measurements of assets and liabilities. This guidance defines fair value as the exchange price that would be received for an asset or paid to transfer a liability, in the principal or most advantageous market for the asset or liability, in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. This guidance requires the Company to classify and disclose assets and liabilities measured at fair value on a recurring basis, as well as fair value measurements of assets and liabilities measured on a nonrecurring basis in periods subsequent to initial measurement, in a three-tier fair value hierarchy as follows:

- Level 1 - Observable inputs that reflect quoted prices for identical assets or liabilities in active markets.
- Level 2 - Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The carrying value of the Company's financial instruments, including cash equivalents, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their short maturities.

The following table sets forth the fair value of the Company's financial assets and liabilities measured at fair value on a recurring basis based on the three-tier fair value hierarchy:

(in thousands)	December 31, 2023				December 31, 2022			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash equivalents								
Money market funds	\$ 23,683	\$ —	\$ —	\$ 23,683	\$ —	\$ —	\$ —	\$ —
Prepaid and other current assets								
Derivative assets	\$ —	\$ 194	\$ —	\$ 194	\$ —	\$ —	\$ —	\$ —
Total assets	<u>\$ 23,683</u>	<u>\$ 194</u>	<u>\$ —</u>	<u>\$ 23,877</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>
Accrued and other current liabilities								
Derivative liabilities	\$ —	\$ 384	\$ —	\$ 384	\$ —	\$ 33	\$ —	\$ 33
Total liabilities	<u>\$ —</u>	<u>\$ 384</u>	<u>\$ —</u>	<u>\$ 384</u>	<u>\$ —</u>	<u>\$ 33</u>	<u>\$ —</u>	<u>\$ 33</u>

The Company's financial instruments not measured at fair value on a recurring basis were as follows:

(in thousands)	December 31, 2023				December 31, 2022			
	Carrying Value	Fair Value			Carrying Value	Fair Value		
		Level 1	Level 2	Level 3		Level 1	Level 2	Level 3
2024 Notes	\$ 114,880	\$ —	\$ 177,405	\$ —	\$ 113,981	\$ —	\$ 181,139	\$ —
French and other loans	\$ 15,413	\$ —	\$ 15,413	\$ —	\$ 11,161	\$ —	\$ 11,161	\$ —

The fair value of the Company's Notes is influenced by interest rates, the price of the Company's common stock and stock market volatility. The difference between the carrying value and the fair value is primarily due to the spread between the conversion price and the market value of the shares underlying the conversion as of each respective balance sheet date. The Company's French and other loans are classified within Level 2 because these borrowings are not actively traded and the majority of them have a variable interest rate structure based upon market rates currently available to the Company for debt with similar terms and maturities; therefore, the carrying value of these debts approximate its fair value. Refer to Note 11, "Convertible Notes and Other Debts," for additional information.

During the years ended December 31, 2023, 2022, and 2021, there were no nonrecurring fair value measurements of assets and liabilities subsequent to initial recognition.

NOTE 7: GOODWILL

The changes in the Company's carrying amount of goodwill are as follows:

(in thousands)	Video	Broadband	Total
Balance as of December 31, 2021	\$ 179,398	\$ 60,815	\$ 240,213
Foreign currency translation adjustment	(2,409)	(65)	(2,474)
Balance as of December 31, 2022	\$ 176,989	\$ 60,750	\$ 237,739
Foreign currency translation adjustment	1,380	31	1,411
Balance as of December 31, 2023	<u>\$ 178,369</u>	<u>\$ 60,781</u>	<u>\$ 239,150</u>

NOTE 8: ACCOUNTS RECEIVABLE

Accounts receivable, net of allowances, consisted of the following:

(in thousands)	As of December 31,	
	2023	2022
Accounts receivable	\$ 144,731	\$ 110,576
Less: allowance for expected credit losses and sales returns	(3,200)	(2,149)
Total	<u>\$ 141,531</u>	<u>\$ 108,427</u>

Trade accounts receivable are recorded at invoiced amounts and do not bear interest. The Company generally does not require collateral and performs ongoing credit evaluations of its customers and provides for expected losses. The Company maintains an allowance for expected credit losses based upon the expected collectability of its accounts receivable. The expectation of collectability is based on the Company's review of credit profiles of customers, contractual terms and conditions, current economic trends and historical payment experience. The Company offers return rights which are specifically identified and accrued for as sales returns at the end of the period.

The following table is a summary of activities in allowances for expected credit losses and sales returns:

<i>(in thousands)</i>	Balance at Beginning of Period	Charges to Revenue	Charges to Expense	Deductions from Reserves	Balance at End of Period
Year ended December 31,					
2023	\$ 2,149	\$ 1,224	\$ 1,554	\$ (1,727)	\$ 3,200
2022	\$ 2,853	\$ 1,118	\$ 836	\$ (2,658)	\$ 2,149
2021	\$ 2,068	\$ 2,609	\$ 1,533	\$ (3,357)	\$ 2,853

On September 29, 2023, the Company entered into a Master Receivable Purchase Agreement with JPMorgan Chase Bank, N.A. ("JPM"), as purchaser. The agreement allows the Company, from time to time, to sell certain eligible billed receivables in an aggregate outstanding amount of up to \$30 million to JPM. The purchase price of the receivables is equal to the net invoice amount less a financing charge. The Company accounts for the transfers as sales under ASC 860, Transfers and Servicing, derecognize the receivables from its consolidated balance sheets at the date of the sale, and includes the cash received from JPM as part of the cash flows from operating activities on its Consolidated Statement of Operations. During the year ended December 31, 2023, the Company did not sell any of its billed receivables.

NOTE 9: CERTAIN BALANCE SHEET COMPONENTS

Inventories:

<i>(in thousands)</i>	December 31,	
	2023	2022
Finished goods	\$ 43,987	\$ 65,308
Raw materials	27,806	46,081
Work-in-process	5,056	3,251
Service-related spares	7,133	6,309
Total	\$ 83,982	\$ 120,949

Prepaid expenses and other current assets:

<i>(in thousands)</i>	December 31,	
	2023	2022
Prepaid expenses	\$ 3,789	\$ 5,558
Contract assets ⁽¹⁾	4,772	5,583
Other current assets	12,389	15,196
Total	\$ 20,950	\$ 26,337

(1) Contract assets reflect the satisfied performance obligations for which the Company does not yet have an unconditional right to consideration.

Property and equipment, net:

<i>(in thousands)</i>	December 31,	
	2023	2022
Machinery and equipment	\$ 74,659	\$ 75,589
Capitalized software	27,129	30,588
Leasehold improvements	40,931	39,199
Furniture and fixtures	2,547	2,739
Construction-in-progress	1,789	2,691
Property and equipment, gross	147,055	150,806
Less: accumulated depreciation and amortization	(110,372)	(110,992)
Total	\$ 36,683	\$ 39,814

Other current liabilities:

(in thousands)	December 31,	
	2023	2022
Accrued employee compensation and related expenses	\$ 22,779	\$ 29,675
Other	38,245	37,049
Total	\$ 61,024	\$ 66,724

NOTE 10: RESTRUCTURING AND RELATED CHARGES

The Company has implemented several restructuring plans in the past few years. The goal of these plans was to bring operational expenses to appropriate levels relative to the Company's net revenue, while simultaneously implementing extensive company-wide expense control programs. The restructuring plans have primarily been comprised of severance payments and termination benefits related to headcount reductions. The Company accounts for its restructuring plans under the authoritative guidance for exit or disposal activities.

The following table summarizes the activities related to the Company's restructuring plans accrual, reported as components of "Other current liabilities" on the Consolidated Balance Sheets:

(in thousands)	Severance and Benefits
Balance at December 31, 2022	\$ 1,044
Charges for current period	1,496
Cash payments	(2,256)
Other	29
Balance at December 31, 2023	\$ 313

For the year ended December 31, 2023, \$0.7 million and \$0.8 million of restructuring and related charges are included in "Cost of revenue" and "Operating expenses - Restructuring and related charges", respectively, in the Consolidated Statements of Operations.

NOTE 11: CONVERTIBLE NOTES AND OTHER DEBTS**4.375% Convertible Senior Notes due 2022 (the "2022 Notes")**

In June 2020, the Company issued the 2022 Notes with an aggregate principal amount of \$37.7 million in a non-cash exchange for its 2020 Notes with an equal principal amount pursuant to an indenture, dated June 2, 2020 (the "2022 Notes Indenture"), by and between the Company and U.S. Bank Trust Company, National Association (as successor in interest to U.S. Bank National Association), as trustee. The 2022 Notes bore interest at a rate of 4.375% per year, payable in cash on June 1 and December 1 of each year. The 2022 Notes matured on December 1, 2022.

The 2022 Notes were initially convertible into cash, shares of the Company's common stock, or a combination thereof, at the Company's election, at an initial conversion rate of 173.9978 shares of the Company's common stock per \$1,000 principal amount of the 2022 Notes (which is equivalent to an initial conversion price of approximately \$5.75 per share). Pursuant to the supplemental indenture entered into by the Company and the trustee during the fourth quarter of fiscal 2021, the Company made an irrevocable election to settle the principal amounts of the 2022 Notes solely with cash and may pay or deliver, as the case may be, any conversion value greater than the principal amount in cash, shares of the Company's common stock or a combination thereof, at the Company's election. The conversion rate, and thus the effective conversion price, was adjustable under certain circumstances, including in connection with conversions made following certain fundamental changes and under other circumstances as set forth in the 2022 Notes Indenture.

As discussed in the Note 2. "Recent Accounting Pronouncements", effective January 1, 2022, the Company adopted ASU 2020-06 using the modified retrospective method and, as a result, accounted for the Convertible debt as a single liability measured at amortized cost.

Prior to maturity date, the entire principal balance of \$37.7 million was converted by holders of the 2022 Notes. In accordance with provisions of the 2022 Notes Indenture and the aforementioned supplemental indenture, conversions were settled in a combination of cash and the Company's common Stock. The principal amount of \$37.7 million that matured on December 1, 2022 was paid in cash. The conversion value greater than the principal amount was delivered in 3.9 million shares of the Company's common stock.

The following table presents interest expense recognized for the 2022 Notes:

	Year Ended December 31,		
	2023	2022	2021
Contractual interest expense	\$ —	\$ 1,511	\$ 1,648
Amortization of debt discount	—	—	685
Amortization of debt issuance costs	—	257	214
Total interest expense recognized	\$ —	\$ 1,768	\$ 2,547

2.00% Convertible Senior Notes due 2024 (the “2024 Notes”)

In September 2019, the Company issued \$115.5 million of the 2024 Notes pursuant to an indenture (the “2024 Notes Indenture”), dated September 13, 2019, by and between the Company and U.S. Bank Trust Company, National Association (as successor in interest to U.S. Bank National Association), as trustee. The 2024 Notes bear interest at a rate of 2.00% per year, payable semi-annually on March 1 and September 1 of each year, beginning March 1, 2020. The 2024 Notes will mature on September 1, 2024, unless earlier repurchased by the Company, redeemed by the Company or converted pursuant to their terms.

The 2024 Notes were initially convertible into cash, shares of the Company’s common stock, or a combination thereof, at the Company’s election, at an initial conversion rate of 115.5001 shares of the Company’s common stock per \$1,000 principal amount of the 2024 Notes (which is equivalent to an initial conversion price of approximately \$8.66 per share). Pursuant to the supplemental indenture entered into by the Company and the trustee during the fourth quarter of the fiscal year ended December 31, 2021, the Company made an irrevocable election to settle the principal amounts of the 2024 Notes solely with cash and may pay or deliver, as the case may be, any conversion value greater than the principal amount in cash, shares of the Company’s common stock or a combination thereof, at the Company’s election. The conversion rate, and thus the effective conversion price, may be adjusted under certain circumstances, including in connection with conversions made following certain fundamental changes or a notice of redemption and under other circumstances, in each case, as set forth in the 2024 Notes Indenture.

The 2024 Notes will be convertible at certain times and upon the occurrence of certain events in the future, in each case, specified in the 2024 Notes Indenture. Further, on or after June 1, 2024, until the close of business on the scheduled trading day immediately preceding the maturity date, holders of the 2024 Notes may convert all or a portion of their 2024 Notes regardless of these conditions.

The 2024 Notes are recorded at face value less unamortized debt issuance costs. Amortization costs are reported as a component of interest expense and are computed using the effective interest method. As the 2024 Notes mature within the next twelve months, they are classified as “Convertible debt, current” on the Consolidated Balance Sheet as of December 31, 2023.

The following table presents the components of the 2024 Notes:

	As of December 31,	
	2023	2022
Liability:		
Principal amount	\$ 115,500	\$ 115,500
Less: Debt issuance costs, net of amortization	(620)	(1,519)
Carrying amount	\$ 114,880	\$ 113,981

The following table presents interest expense recognized for the 2024 Notes:

	Year Ended December 31,		
	2023	2022	2021
Contractual interest expense	\$ 2,312	\$ 2,312	\$ 2,312
Amortization of debt discount	—	—	4,718
Amortization of debt issuance costs	898	874	641
Total interest expense recognized	\$ 3,210	\$ 3,186	\$ 7,671

Other Debts

The Company has a variety of debt and credit facilities primarily in France to satisfy the financing requirements of the operations of its French subsidiary. These arrangements are summarized in the table below:

(in thousands)	December 31,	
	2023	2022
Financing from French government agencies related to various government incentive programs ⁽¹⁾	\$ 11,268	\$ 10,580
Relief loans ⁽²⁾	4,145	5,337
Total debt obligations	15,413	15,917
Less: current portion	(4,918)	(4,756)
Long-term portion	\$ 10,495	\$ 11,161

(1) These loans bear variable interest rate at EURIBOR 1 month plus 1.9% and mature between 2024 through 2026.

(2) Refer to the below section “Relief Loans” for the description of these loans.

The table below presents the future minimum repayments of other debts as of December 31, 2023 (in thousands):

Year ending December 31,		
2024	\$	4,918
2025		5,238
2026		5,257
Total	\$	15,413

Relief Loans

In June 2020, Harmonic France was granted a loan from Société Générale S.A. (the “SG Loan”) in the aggregate amount of 5 million Euros, pursuant to a state guarantee program introduced in March 2020 to provide relief to companies from the financial consequences of the COVID-19 pandemic. The SG Loan was initially maturing in June 2021. During 2021, SG Loan maturity was extended to June 2026. The SG loan bears an effective interest rate of 0.51% per annum payable annually and may be repaid at any time prior to maturity with no repayment penalties. There are no restrictions on the use of funds from the SG Loan. The purpose of the funds from the SG Loan is to allow the preservation of activity and employment in France. As of December 31, 2023, there was \$4.1 million outstanding under the loan, of which \$1.4 million was recorded in “Other debts, current” and \$2.7 million was recorded in “Other debts, non-current” in the Consolidated Balance Sheets.

Line of Credit

On December 21, 2023, the Company entered into a five-year Credit Agreement (the “Credit Agreement”), by and among the Company, certain subsidiaries of the Company from time to time party thereto, the lenders from time to time party thereto, and Citibank, N.A., as administrative agent for the lenders. The Credit Agreement provides for a secured revolving loan facility in an aggregate principal amount of up to \$120.0 million (the “Revolving Facility”), with a \$10.0 million sublimit for the issuance of letters of credit, and a secured delayed term loan facility in an aggregate principal amount of up to \$40.0 million (the “Term Facility”). The Credit Agreement refinances and replaces the Company’s prior credit agreement, dated as of December 19, 2019, as amended, with JPMorgan Chase Bank, N.A., as lender.

The proceeds of the loans under the Revolving Facility may be used for general corporate purposes. To the extent drawn, the proceeds of the loans under the Term Facility must be used to repurchase, redeem, acquire or otherwise settle the 2024 Notes. The Company may borrow term loans under the Term Facility in up to three drawings through September 1, 2024, on which date any undrawn commitments under the Term Facility expire. The Revolving Facility and Term Facility mature on December 21, 2028.

Loans under the Revolving Facility and Term Facility will bear interest, at the Company’s election, at a floating rate per annum equal to either (a) a base rate, defined as the greatest of (i) the prime rate then in effect, (ii) the federal funds rate then in effect, plus 0.50%, or (iii) an adjusted term SOFR rate determined on the basis of a one-month interest period, plus 1.00%, in each case, plus a margin of between 1.00% to 1.75% (“Base Rate Loans”); and (b) an adjusted term SOFR rate (based on one, three or six month interest periods), plus a margin of between 2.00% to 2.75% (“Adjusted Term SOFR Loans”). The applicable margin in each case is determined based on the Company’s consolidated net leverage ratio. Interest is payable quarterly in arrears, in the case of Base Rate Loans, and at the end of the applicable interest period, but at least every three months, in the case of Adjusted Term SOFR Loans. The Company incurred \$1.3 million in origination fee related to the Credit Agreement and this origination fee is being amortized over the term of the Credit Agreement. The Company is also obligated to pay other closing fees, commitment fees and letter of credit fees customary for a credit agreement of this size and type.

The obligations under the Credit Agreement are required to be guaranteed by certain of the Company's material subsidiaries and secured by substantially all of the assets of the Company and such subsidiary guarantors. The Credit Agreement contains customary affirmative and negative covenants, including covenants limiting the ability of the Company and its subsidiaries to, among other things, grant liens, incur debt, make acquisitions and other investments, undergo certain fundamental changes, dispose of assets, make certain restricted payments, enter into transactions with affiliates, and enter into burdensome agreements, in each case, subject to limitations and exceptions set forth in the Credit Agreement. The Company is also required to maintain compliance with a maximum consolidated net leverage ratio and a minimum fixed charge coverage ratio, in each case, determined in accordance with the terms of the Credit Agreement. As of December 31, 2023, the Company was in compliance with the covenants under the Credit Agreement.

As of December 31, 2023, there were no borrowings under the Credit Agreement outstanding and approximately \$0.2 million of letters of credit outstanding under the Credit Agreement.

NOTE 12: EMPLOYEE BENEFIT PLANS

Equity Award Plans

1995 Stock Plan

The 1995 Stock Plan provides for the grant of incentive stock options, non-statutory stock options and restricted stock units ("RSUs"). Incentive stock options may be granted only to employees. All other awards may be granted to employees and non-employees. Under the terms of the 1995 Stock Plan, no incentive stock option or non-statutory stock option may be granted in the ordinary course of business with a per share exercise price that is less than 100% of the fair value of the Company's common stock on the date of grant. RSUs have no exercise price. Both options and RSUs vest over a period of time as determined by the Company's Board of Directors (the "Board"), generally two to four years, and options expire seven years from the date of grant. Some of the RSUs granted by the Company have performance-based vesting terms, where vesting is dependent on achievement of certain financial and non-financial operating goals of the Company (performance-based RSUs, or "PRSUs"), or where vesting is dependent on performance of the Company's total shareholder return ("TSR") relative to the TSR of the NASDAQ Telecommunication Index (market-based RSUs, or "MRSUs"). The fair value of PRSUs is estimated on the date of grant based on the market value of our common stock. If the performance goals are not met as of the end of the performance period, no compensation expense is recognized and any previously recognized compensation expense is reversed. The expected cost is based on the portion of the awards that is probable to vest and is reflected over the service period. The fair value of MRSUs subject to targeted levels of relative TSR is estimated on the date of grant using a Monte Carlo simulation model. Compensation expense is recognized based upon the assumption of 100% achievement of the TSR goal and will not be reversed even if the threshold level of TSR is never achieved and is reflected over the service period. During the fiscal year 2023, the Company granted 268,704 and 236,749 shares of PRSUs and MRSUs, respectively.

As of December 31, 2023, an aggregate of 8,537,211 shares of common stock were reserved for issuance under the 1995 Stock Plan, of which 5,481,584 shares remained available for future grants.

2002 Director Plan

The 2002 Director Plan provides for the grant of non-statutory stock options and RSUs to non-employee directors of the Company. Under the terms of the 2002 Director Plan, no non-statutory stock option may be granted with a per share exercise price that is less than 100% of the fair value of the Company's common stock on the date of grant. RSUs have no exercise price. Both options and RSUs vest over a period of time as determined by the Board, generally one year for RSUs and three years for options, and options expire seven years from the date of grant. As of December 31, 2023, an aggregate of 637,671 shares of common stock were reserved for issuance under the 2002 Director Plan, of which 451,077 shares remained available for future grants.

Employee Stock Purchase Plan

The 2002 Employee Stock Purchase Plan (“ESPP”) provides for the issuance of share purchase rights to employees of the Company. The ESPP is intended to qualify as an “employee stock purchase plan” under Section 423 of the Internal Revenue Code. The ESPP enables employees to purchase shares at 85% of the fair market value of the Common Stock at the beginning or end of the offering period, whichever is lower. Offering periods generally begin on the first trading day on or after January 1 and July 1 of each year. Employees may participate through payroll deductions of 1% to 10% of their earnings. In the event that there are insufficient shares in the plan to fully fund the issuance, the available shares will be allocated across all participants based on their contributions relative to the total contributions received for the offering period. The Company’s stockholders approved an amendment to the ESPP Plan at the 2023 Annual Meeting to increase the number of shares of common stock reserved for issuance thereunder by 650,000 shares. As of December 31, 2023, 633,932 shares were reserved for future purchases by eligible employees. Under the ESPP, 733,030, 817,243 and 1,024,244 shares were issued during fiscal 2023, 2022 and 2021, respectively, representing \$6.6 million, \$5.9 million and \$5.1 million in contributions.

Stock Options

All stock options were fully vested and exercised as of December 31, 2022. No stock options were granted in 2023.

Restricted Stock Units

<i>(in thousands, except per share amounts)</i>	Number of Shares	Weighted Average Grant-Date Fair Value Per Share
Balance at December 31, 2022	3,499	\$ 8.93
Granted	2,539	13.65
Vested	(2,516)	8.96
Forfeited	(280)	9.40
Balance at December 31, 2023	3,242	\$ 12.42

The fair value of RSUs vested during the years ended December 31, 2023, 2022 and 2021 was \$22.5 million, \$22.4 million and \$18.3 million, respectively.

Share-based Compensation Cost

The following table sets forth the detailed allocation of the share-based compensation expense which was included in the Company’s Consolidated Statements of Operations:

<i>(in thousands)</i>	Year Ended December 31,		
	2023	2022	2021
Share-based compensation expense included in:			
Cost of revenue	\$ 2,348	\$ 2,233	\$ 2,345
Research and development expense	7,889	7,519	7,164
Selling, general and administrative expense	17,092	15,460	14,547
Total	\$ 27,329	\$ 25,212	\$ 24,056
Share-based compensation expense by type of award:			
RSUs	\$ 19,863	\$ 17,786	\$ 14,573
PRSUs	3,398	3,865	6,231
MRSUs	1,705	1,558	1,304
Employee stock purchase rights under ESPP	2,363	2,003	1,948
Total	\$ 27,329	\$ 25,212	\$ 24,056

As of December 31, 2023, total unrecognized share-based compensation cost related to unvested RSUs was \$26.3 million and is expected to be recognized over a weighted-average period of approximately 1.6 years.

French Pension Plan

Under French law, the Company's subsidiaries in France are obligated to make certain payments to their employees upon their retirement from the Company. These payments are based on the retiring employee's salary for a number of months that varies according to the employee's period of service and position. Salary used in the calculation is the employee's average monthly salary for the twelve months prior to retirement. The payments are made in one lump-sum at the time of retirement. The French pension plan is unfunded and there are no contributions to the plan required by related laws or funding regulations. No required contributions are expected in fiscal 2024, but the Company, at its discretion, may make contributions to the defined benefit plan.

The Company's defined benefit pension obligations are measured annually as of December 31. The present value of these lump-sum payments is determined on an actuarial basis and the actuarial valuation considers the employees' age and period of service with the Company, projected mortality rates, mobility rates, increases in salaries and a discount rate.

The Company's pension obligations as of December 31, 2023 and 2022, and the changes to the Company's pension obligations for each of those years, were as follows:

<i>(in thousands)</i>	2023	2022
Projected benefit obligation:		
Balance at January 1	\$ 5,283	\$ 6,003
Service cost	217	259
Interest cost	169	50
Actuarial gains	(25)	(626)
Benefits paid	(275)	(107)
Foreign currency translation adjustment	227	(296)
Balance at December 31	<u>\$ 5,596</u>	<u>\$ 5,283</u>

Presented on the Consolidated Balance Sheets as:

Current portion (included in "Accrued and other current liabilities")	\$ 33	\$ 242
Long-term portion (included in "Other non-current liabilities")	\$ 5,563	\$ 5,041

The table below presents the components of net periodic benefit costs:

<i>(in thousands)</i>	Year Ended December 31,		
	2023	2022	2021
Service cost	\$ 217	\$ 259	\$ 272
Interest cost	169	50	20
Net periodic benefit cost included in result of operations	<u>\$ 386</u>	<u>\$ 309</u>	<u>\$ 292</u>

The following assumptions were used in determining the Company's pension obligation:

	As of December 31,	
	2023	2022
Discount rate	3.8 %	3.3 %
Mobility rate	6.2 %	6.6 %
Salary progression rate	3.0 %	3.0 %

The Company evaluates the discount rate assumption annually. The discount rate is determined using the average yields on high-quality fixed-income securities that have maturities consistent with the timing of benefit payments.

The Company also evaluates other assumptions related to demographic factors, such as retirement age, mortality rates and turnover periodically, updating them to reflect experience and expectations for the future. The mortality assumption related to the Company's defined benefit pension plan used the most current mortality tables published by the French National Institute of Statistics and Economic Studies.

As of December 31, 2023, future benefits expected to be paid in each of the next five years, and in the aggregate for the five-year period thereafter are as follows (in thousands):

Year ending December 31,

2024	\$	33
2025		154
2026		180
2027		399
2028		797
2029 – 2033		4,210
Total	\$	5,773

Valuation Assumptions

The Company estimates the fair value of stock purchase rights under the ESPP using a Black-Scholes option valuation model. The value of the stock purchase rights under the ESPP consists of: (1) the 15% discount on the purchase of the stock; (2) 85% of the fair value of the call option; and (3) 15% of the fair value of the put option. The call option and put option were valued using the Black-Scholes option pricing model. At the date of grant, the Company estimated the fair value of each stock purchase right granted under the ESPP using the following weighted average assumptions:

	Year Ended December 31,		
	2023	2022	2021
Expected term (in years)	0.50	0.50	0.50
Volatility	46 %	47 %	45 %
Risk-free interest rate	5.2 %	1.4 %	0.1 %
Expected dividends	0.0 %	0.0 %	0.0 %

The expected term of the stock purchase right under ESPP represents the period of time from the beginning of the offering period to the purchase date. The Company uses its historical volatility for a period equivalent to the expected term to estimate the expected volatility. The risk-free interest rate that the Company uses in the Black-Scholes option valuation model is based on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term. The Company has not paid and does not plan to pay any cash dividends in the foreseeable future.

The estimated weighted-average fair value per share of stock purchase rights under the ESPP, granted for the years ended December 31, 2023, 2022 and 2021 was \$4.23, \$2.91 and \$2.24, respectively.

NOTE 13: STOCKHOLDERS' EQUITY

Share Repurchase Program

In February 2022, the Board of Directors authorized the Company to repurchase up to \$100 million of the Company's outstanding shares of common stock through February 2025. The Company is authorized to repurchase, from time-to-time, shares of its outstanding common stock through open market purchases and 10b5-1 trading plans, in accordance with applicable rules and regulations, at such time and such prices as management may decide. The program does not obligate the Company to repurchase any specific number of shares and may be discontinued at any time. The actual timing and amount of repurchases are subject to business and market conditions, corporate and regulatory requirements, stock price, acquisition opportunities and other factors.

There were no repurchase activities authorized during fiscal year 2023. As of December 31, 2023, approximately \$94.9 million of the share repurchase authorization remained available for repurchases under this program.

NOTE 14: INCOME TAXES

Income before income tax:

(in thousands)	Year Ended December 31,		
	2023	2022	2021
Domestic	\$ (1,734)	\$ 24,680	\$ (5,688)
Foreign	20,875	19,805	14,559
Income before income taxes	\$ 19,141	\$ 44,485	\$ 8,871

Provision for (benefit from) income taxes:

(in thousands)	Year Ended December 31,		
	2023	2022	2021
Current:			
Federal	\$ 19,441	\$ 4,443	\$ 4
State	4,582	3,236	85
Foreign	3,980	3,730	2,469
Deferred:			
Federal	(81,632)	—	—
State	(12,416)	—	—
Foreign	1,192	4,894	(6,941)
Total provision for (benefit from) income taxes	<u>\$ (64,853)</u>	<u>\$ 16,303</u>	<u>\$ (4,383)</u>

The difference between the tax provision at the statutory federal income tax rate and the provision for (benefit from) income tax as a percentage of income (loss) before income taxes (effective tax rate) for each period was as follows:

	Year Ended December 31,		
	2023	2022	2021
Statutory U.S. federal income tax rate	21 %	21 %	21 %
Increase (reduction) in rate resulting from:			
State Taxes	(4)%	7 %	— %
Differential in rates on foreign earnings	(13)%	1 %	42 %
Change in valuation allowance	(350)%	15 %	(113)%
Change in liabilities for uncertain tax positions	— %	— %	(2)%
Non-deductible stock-based compensation	6 %	4 %	11 %
Permanent differences	(5)%	(1)%	— %
Adjustments related to tax positions taken during prior years	12 %	(8)%	(3)%
Research and development credits	(6)%	(2)%	(10)%
Other	— %	— %	3 %
Effective tax rate	<u>(339)%</u>	<u>37 %</u>	<u>(49)%</u>

The Company operates in multiple jurisdictions and its profits are taxed pursuant to the tax laws of these jurisdictions. The Company's effective income tax rate differs from the U.S. federal statutory rate primarily due to geographical mix of income and losses, valuation allowance release on U.S. federal and certain state deferred tax assets, and income taxes on earnings from operations in foreign tax jurisdictions. The Company's effective income tax rate may be affected by changes in its interpretations of tax laws and tax agreements in any given jurisdiction, changes in geographical mix of income and expense, and changes in management's assessment of matters such as the ability to realize deferred tax assets, as well as one-time discrete items. During fiscal 2023, the Company recorded a one-time benefit of \$67.7 million due to the release of the valuation allowance on deferred tax assets in U.S. Federal and state jurisdictions due to its improved earnings in recent years and projected earnings.

The components of deferred taxes are as follows:

(in thousands)	As of December 31,	
	2023	2022
Deferred tax assets:		
Reserves and accruals	\$ 24,908	\$ 27,376
Net operating loss carryforwards	14,376	16,032
Research and development credit carryforwards	30,117	28,952
Deferred stock-based compensation	1,863	1,376
Intangibles	5,651	6,384
Operating lease liabilities	6,216	7,423
Capitalized research and development expenses	64,075	36,210
Other	3,110	1,139
Gross deferred tax assets	150,316	124,892
Valuation allowance	(37,084)	(101,020)
Gross deferred tax assets after valuation allowance	113,232	23,872
Deferred tax liabilities:		
Depreciation	(3,506)	(5,971)
Operating lease right-of-use assets	(5,019)	(6,125)
Gross deferred tax liabilities	(8,525)	(12,096)
Net deferred tax assets	\$ 104,707	\$ 11,776

The following table summarizes the activities related to the Company's valuation allowance:

(in thousands)	Year Ended December 31,		
	2023	2022	2021
Balance at beginning of period	\$ 101,020	\$ 90,247	\$ 99,585
Additions	477	10,773	310
Deductions	(64,413)	—	(9,648)
Balance at end of period	\$ 37,084	\$ 101,020	\$ 90,247

Management regularly assesses the ability to realize deferred tax assets recorded based upon the weight of available evidence, including such factors as recent earnings history and expected future taxable income on a jurisdiction-by-jurisdiction basis. In 2023, the Company determined the deferred tax assets in the U.S. federal and certain state jurisdictions would more-likely-than-not be realizable and released the valuation allowance against those assets accordingly. In the event the Company changes its determination as to the amount of realizable deferred tax assets, the Company will adjust its valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

As of December 31, 2023, the Company had \$89.3 million and \$28.7 million of foreign and U.S. state net operating loss ("NOL") carryforwards, respectively. The Company has now fully utilized their available U.S. federal NOLs. Certain foreign NOLs expire beginning in 2026, if not utilized, while the majority of the foreign NOLs carryforward indefinitely. Certain U.S. states NOL carryforward expires at various dates beginning in 2027, if not utilized.

As of December 31, 2023, the Company had U.S. federal and California state tax credit carryforwards of \$1.7 million and \$37.0 million, respectively. If not utilized, the U.S. federal tax credit carryforwards will begin to expire in 2031, while the California tax credit carryforward will not expire.

In the event the Company experiences an ownership change within the meaning of Section 382 of the Internal Revenue Code ("IRC"), the Company's ability to utilize net operating losses, tax credits and other tax attributes may be limited.

The Company has not provided U.S. state income taxes and foreign withholding taxes, on approximately \$58.8 million of cumulative earnings for certain non-U.S. subsidiaries, because such earnings are intended to be indefinitely reinvested. Determination of the amount of unrecognized deferred tax liability for temporary differences related to investments in these non-U.S. subsidiaries that are essentially permanently in duration is not practicable.

The Company applies the provisions of the applicable accounting guidance regarding accounting for uncertainty in income taxes, which require application of a more-likely-than-not threshold to the recognition and derecognition of uncertain tax positions. If the recognition threshold is met, the applicable accounting guidance permits the recognition of a tax benefit measured at the largest amount of such tax benefit that, in the Company's judgment, is more than fifty percent likely to be realized upon settlement. It further requires that a change in judgment related to the expected ultimate resolution of uncertain tax positions to be recognized in earnings in the period in which such determination is made. The Company will continue to review its tax positions and provide for, or reverse, unrecognized tax benefits as issues arise. As of December 31, 2023, the Company had \$12.5 million of unrecognized future tax benefits. Of these, \$5.8 million would favorably impact the effective tax rate in future periods if recognized, and \$6.7 million will have no or minimal impact on the effective tax rate in future periods if recognized due to a valuation allowance on such unrecognized tax benefits.

The following table summarizes the activities related to the Company's gross unrecognized tax benefits:

(in millions)	Year Ended December 31,		
	2023	2022	2021
Balance at beginning of period	\$ 11.1	\$ 13.8	\$ 17.6
Increase in balance related to tax positions taken during current year	0.4	0.3	0.3
Decrease in balance as a result of a lapse of the applicable statutes of limitations	—	—	(0.2)
Increase in balance related to tax positions taken during prior years	1.0	—	—
Decrease in balance related to tax positions taken during prior years	—	(3.0)	(3.9)
Balance at end of period	<u>\$ 12.5</u>	<u>\$ 11.1</u>	<u>\$ 13.8</u>

The Company recognizes interest and penalties related to unrecognized tax positions in income tax expense on the Consolidated Statements of Operations. The net interest and penalties charges recorded for the years ended December 31, 2021 through 2023, were not material.

The 2019 through 2022 tax years generally remain subject to examination by U.S. federal and most state tax authorities. Net operating losses generated on a tax return basis by the Company for the 2015 to 2020 tax years and research and development credits for 2011 to 2022 tax years remain open to examination. In addition, the Company remains subject to income tax examination for several other jurisdictions, including in Switzerland for years after 2018, Israel for years after 2019, and France for years after 2016.

NOTE 15: NET INCOME PER SHARE

Basic earnings per share is computed by dividing net income for the period by the weighted average number of common shares outstanding during the period. Diluted earnings per shares is calculated by dividing net income by the weighted average number of common shares and potentially dilutive securities outstanding during the period using the treasury stock method for the Company's stock options, restricted stock units, and shares issuable under the ESPP, and the if-converted method for the 2024 Notes.

As noted in Note 11, "Convertible Notes and Other Debts," the principal amount of the 2024 Notes will be settled in cash. Therefore, for the purpose of calculating diluted net income per share, it will be assumed that the conversion spread value will be settled in shares.

The following table sets forth the computation of the basic and diluted net income per share:

(in thousands, except per share amounts)	Year Ended December 31,		
	2023	2022	2021
Numerator:			
Net income	\$ 83,994	\$ 28,182	\$ 13,254
Denominator:			
Weighted average number of shares outstanding:			
Basic	111,651	105,080	101,484
2022 Notes	—	2,681	2,175
2024 Notes	4,320	2,441	653
Stock options	—	213	292
Restricted stock units	1,355	1,884	1,525
Stock purchase rights under ESPP	33	79	42
Diluted	117,359	112,378	106,171
Net income per share:			
Basic	\$ 0.75	\$ 0.27	\$ 0.13
Diluted	\$ 0.72	\$ 0.25	\$ 0.12

The following table set forth the potential dilutive shares that were excluded from the computation of diluted net income per share, because their effects were anti-dilutive:

(in thousands)	Year Ended December 31,		
	2023	2022	2021
Stock options	—	—	8
Restricted stock units	276	38	27
Stock purchase rights under the ESPP	—	—	390
Total	276	38	425

NOTE 16: SEGMENT INFORMATION, GEOGRAPHIC INFORMATION AND CUSTOMER CONCENTRATION

Segment Information

Operating segments are defined as components of an enterprise that engage in business activities for which separate financial information is available and evaluated by the Company's Chief Operating Decision Maker (the "CODM"), which for the Company is its Chief Executive Officer, in deciding how to allocate resources and assess performance. Based on the internal reporting structure, the Company consists of two operating segments: Video and Broadband. The operating segments were determined based on the nature of the products offered. The Video segment provides video processing, production and playout solutions and services worldwide to broadcast and media companies, new streaming media companies, broadband operators, and satellite and telco Pay-TV service providers. The Broadband segment provides broadband access solutions and related services to broadband operators globally. A measure of assets by segment is not applicable as segment assets are not included in the discrete financial information provided to the CODM.

The following table provides summary financial information by reportable segment:

<i>(in thousands)</i>	Year Ended December 31,		
	2023	2022	2021
Video			
Revenue	\$ 219,425	\$ 274,189	\$ 288,507
Operating income (loss)	(8,741)	22,322	28,460
Broadband			
Revenue	\$ 388,482	\$ 350,768	\$ 218,642
Operating income	64,575	52,283	15,599
Total			
Revenue	\$ 607,907	\$ 624,957	\$ 507,149
Operating income	\$ 55,834	\$ 74,605	\$ 44,059

A reconciliation of the Company's consolidated segment operating income to consolidated income before income taxes is as follows:

<i>(in thousands)</i>	Year Ended December 31,		
	2023	2022	2021
Total consolidated segment operating income	\$ 55,834	\$ 74,605	\$ 44,059
Unallocated corporate expenses ⁽¹⁾	(6,333)	(3,874)	(681)
Stock-based compensation	(27,329)	(25,212)	(24,062)
Amortization of intangibles	—	—	(507)
Consolidated income from operations	22,172	45,519	18,809
Non-operating expense, net	(3,031)	(1,034)	(9,938)
Income before income taxes	\$ 19,141	\$ 44,485	\$ 8,871

(1) Together with amortization of intangibles and stock-based compensation, the Company does not allocate restructuring and related charges and certain other non-recurring charges to the operating income (loss) for each segment because management does not include this information in the measurement of the performance of the operating segments.

Disaggregation of Revenues

The following table provides a summary of total revenues disaggregated by type:

(in thousands)	Year Ended December 31,		
	2023	2022	2021
Product sales	\$ 396,682	\$ 423,858	\$ 343,406
Professional services	39,196	49,948	26,361
Total Appliance and integration	435,878	473,806	369,767
SaaS	50,888	34,665	21,266
Support services	121,141	116,486	116,116
Total SaaS and services	172,029	151,151	137,382
Total revenue	<u>\$ 607,907</u>	<u>\$ 624,957</u>	<u>\$ 507,149</u>

The following table provides a summary of total net revenues by geographic region:

(in thousands)	Year Ended December 31,		
	2023	2022	2021
Net revenue:			
United States ⁽¹⁾	\$ 408,951	\$ 393,991	\$ 282,912
Other countries ⁽¹⁾	198,956	230,966	224,237
Total	<u>\$ 607,907</u>	<u>\$ 624,957</u>	<u>\$ 507,149</u>

(1) Revenue is attributed to countries based on the location of the customer.

Other than the United States, no single country accounted for 10% or more of the Company's net revenues for the years ended December 31, 2023, 2022 and 2021.

Property and equipment, net:

(in thousands)	As of December 31,	
	2023	2022
United States	\$ 24,260	\$ 25,395
Israel	9,542	10,621
France	2,520	3,372
Other countries	361	426
Total	<u>\$ 36,683</u>	<u>\$ 39,814</u>

Customer Concentration

One customer, Comcast, accounted for 44%, 39% and 26% of the Company's total net revenues during the years ended December 31, 2023, 2022 and 2021, respectively.

NOTE 17: COMMITMENTS AND CONTINGENCIES

Bank Guarantees and Standby Letters of Credit

As of December 31, 2023 and 2022, the Company has outstanding bank guarantees and standby letters of credit in aggregate of \$2.3 million and \$2.1 million, respectively, consisting of building leases and performance bonds issued to customers.

During 2017, one of the Company's subsidiaries entered into a \$2.0 million credit facility with a foreign bank for the purpose of issuing performance guarantees. The credit facility is secured by a \$2.2 million indemnity issued by the parent company. There were no amounts outstanding under this credit facility as of December 31, 2023 and 2022.

On December 21, 2023, the Company entered into a Credit Agreement, with Citibank, N.A., as administrative agent for the lenders. The Credit Agreement refinances and replaces the Company's prior credit agreement, dated as of December 19, 2019, as amended, with JPMorgan Chase Bank, N.A., as lender. As of December 31, 2023, there were no borrowings under the Credit Agreement outstanding and approximately \$0.2 million of letters of credit outstanding under the Credit Agreement. The Company was in compliance with the covenants under the Credit Agreement as of December 31, 2023. Refer to Note 11, "Convertible Notes and other Debts" of the Notes to the Consolidated Financial Statements for additional information regarding the Credit Agreement.

Indemnification

The Company is obligated to indemnify its officers and its directors pursuant to its bylaws and contractual indemnity agreements. The Company also indemnifies some of its suppliers and most of its customers for specified intellectual property matters pursuant to certain contractual arrangements, subject to certain limitations. The scope of these indemnities varies, but, in some instances, includes indemnification for damages and expenses (including reasonable attorneys' fees). There have been no amounts accrued in respect of the indemnification provisions through December 31, 2023.

Purchase Commitments

As of December 31, 2023, the Company had approximately \$95.4 million of commitments to purchase goods and services.

NOTE 18: LEGAL PROCEEDINGS

From time to time, the Company is involved in lawsuits as well as subject to various legal proceedings, claims, threats of litigation, and investigations in the ordinary course of business, including claims of alleged infringement of third-party patents and other intellectual property rights, commercial, employment, and other matters. The Company assesses potential liabilities in connection with each lawsuit and threatened lawsuits and accrues an estimated loss for these loss contingencies if both of the following conditions are met: information available prior to issuance of the financial statements indicates that it is probable that a liability has been incurred at the date of the financial statements and the amount of loss can be reasonably estimated. While certain matters to which the Company is a party specify the damages claimed, such claims may not represent reasonably probable losses. Given the inherent uncertainties of litigation, the ultimate outcome of these matters cannot be predicted at this time, nor can the amount of possible loss or range of loss, if any, be reasonably estimated.

NOTE 19: SUBSEQUENT EVENT

On January 30, 2024, the Company issued a notice to redeem its outstanding 2024 Notes. The redemption of the Notes will be effected pursuant to the terms of the Indenture that governs the Notes (the "Indenture"). The Notes will be redeemed on April 18, 2024 (the "Redemption Date") at a redemption price equal to 100% of the principal amount of the Notes to be redeemed, plus any accrued and unpaid interest to, but excluding, the Redemption Date. Holders of Notes called for redemption will have the right to convert their Notes at any time before the close of business on April 16, 2024 in accordance with the Indenture at a conversion rate of 118.0550 shares (inclusive of Additional Shares, as defined in the Indenture) of the Company's common stock per \$1,000 principal amount of the Notes converted. Pursuant to the terms of the Indenture, the Company has elected to settle any such conversions by Combination Settlement (as defined in the Indenture) with a Specified Dollar Amount (as defined in the Indenture) of \$1,000 per \$1,000 principal amount of Notes.

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

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain “disclosure controls and procedures,” as such term is defined in Rule 13a-15(e) under the Exchange Act, that are designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognized that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Additionally, in designing disclosure controls and procedures, our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. The design of any disclosure controls and procedures also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Based on their evaluation as of the end of the period covered by this Annual Report on Form 10-K, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Management conducted an assessment of the effectiveness of the Company’s internal control over financial reporting based on the criteria set forth in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the Company’s assessment, management concluded that its internal control over financial reporting was effective as of December 31, 2023.

The Company’s independent registered public accounting firm, Ernst & Young LLP, has audited the effectiveness of the Company’s internal control over financial reporting, as stated in their report which appears in Part II, Item 8 of this Form 10-K.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during our fourth quarter of fiscal year 2023, which were identified in connection with management’s evaluation required by paragraph (d) of rules 13a-15 and 15d-15 under the Exchange Act, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. OTHER INFORMATION

None.

Item 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K pursuant to Instruction G to Exchange Act Form 10-K, and the Registrant will file its definitive Proxy Statement for its 2024 Annual Meeting of Stockholders, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the “2024 Proxy Statement”), not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K, and certain information included in the 2024 Proxy Statement is incorporated herein by reference.

Item 10. *DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE*

The information required by this item will be set forth in the 2024 Proxy Statement and is incorporated herein by reference.

Harmonic has adopted a Code of Business Conduct and Ethics (the “Code”) that applies to all employees, including Harmonic’s Chief Executive Officer, Chief Financial Officer and Corporate Controller. The Code is available on the Company’s website at www.harmonicinc.com.

Harmonic intends to satisfy the disclosure requirement under Form 8-K regarding an amendment to, or waiver from, a provision of this Code of Ethics by posting such information on our website, at the address specified above, and, to the extent required by the listing standards of The NASDAQ Global Select Market, by filing a Current Report on Form 8-K with the Securities and Exchange Commission disclosing such information.

Item 11. *EXECUTIVE COMPENSATION*

The information required by this item will be set forth in the 2024 Proxy Statement and is incorporated herein by reference.

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

Information related to security ownership of certain beneficial owners and security ownership of management and related stockholder matters will be set forth in the 2024 Proxy Statement and is incorporated herein by reference.

Item 13. *CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE*

The information required by this item will be set forth in the 2024 Proxy Statement and is incorporated herein by reference.

Item 14. *PRINCIPAL ACCOUNTING FEES AND SERVICES*

The information required by this item will be set forth in the 2024 Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. **EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

1. *Financial Statements.* See Index to Consolidated Financial Statements in Item 8 on page of this Annual Report on Form 10-K.

2. *Financial Statement Schedules.* Financial statement schedules have been omitted because the information is not required to be set forth herein, is not applicable or is included in the financial statements or the notes thereto.

3. *Exhibits.* The documents listed in the Exhibit Index of this Annual Report on Form 10-K are filed herewith or are incorporated by reference in this Annual Report on Form 10-K, in each case as indicated therein.

Exhibit Number	Description
3.1 (i)	Certificate of Incorporation of Harmonic Inc., as amended
3.2 (ii)	Amended and Restated Bylaws of Harmonic Inc.
4.1 (iii)	Form of Common Stock Certificate
4.2 (iv)	Certificate of Designation of Rights, Preferences and Privileges of Series A Participating Preferred Stock of Harmonic Inc.
4.3 (v)	Indenture, dated September 13, 2019, between the Company and U.S. Bank National Association
4.4 (vi)	Supplemental Indenture, dated November 15, 2021 by and between the Company and U.S. Bank National Association
4.5 (vii)	Form of 2.00% Convertible Senior Note due 2024 (included in Exhibit 4.1)
4.6 (viii)	Description of Common Stock
4.7 (ix)	Indenture, dated June 2, 2020, by and between the Company and U.S. Bank National Association
4.8 (x)	Supplemental Indenture, dated November 15, 2021 by and between the Company and U.S. Bank National Association
4.9 (xi)	Form of 4.375% Convertible Senior Note due 2022 (included in Exhibit 4.1)
10.1 (xii)*	Form of Indemnification Agreement
10.2 (xiii)*	1995 Stock Plan, as amended and restated on June 9, 2022
10.3 (xiv)*	2002 Director Stock Plan, as amended and restated on June 8, 2021
10.4 (xv)*	2002 Employee Stock Purchase Plan, as amended and restated on June 9, 2022
10.5 (xvi)*	Amended and Restated Change of Control Severance Agreement between Harmonic Inc. and Patrick Harshman, effective March 20, 2018
10.6 (xvii)*	Form of Change of Control Severance Agreement between Harmonic Inc. and each of Nimrod Ben-Natan and Ian Graham
10.7 (xviii)*	Offer Letter, dated as of May 10, 2023, between Harmonic Inc. and Walter Jankovic
10.8 (xix)*	Change of Control Severance Agreement, dated as of May 22, 2023, between Harmonic Inc. and Walter Jankovic
10.9 (xx)*	Amended and Restated Change of Control Severance Agreement, dated as of November 30, 2023, between Harmonic Inc. and Neven Haltmayer
10.10 (xxi)	Harmonic Inc. 2002 Director Stock Plan Restricted Stock Unit Agreement
10.11 (xxii)	Professional Service Agreement between Harmonic Inc. and Plexus Services Corp., dated September 22, 2003
10.12 (xxiii)	Amendment, dated January 6, 2006, to the Professional Services Agreement for Manufacturing between Harmonic Inc. and Plexus Services Corp., dated September 22, 2003
10.13 (xxiv)	Addendum 1, dated November 26, 2007, to the Professional Services Agreement between Harmonic Inc. and Plexus Services Corp., dated September 22, 2003
10.14 (xxv)	Harmonic Inc. 1995 Stock Plan Restricted Stock Unit Agreement
10.15 (xxvi)	Fifth Amendment to Credit Agreement, dated as of September 29, 2023, by and among Harmonic Inc., Harmonic International GmbH and JPMorgan Chase Bank, N.A.

10.16 (xxvii)	Master Receivables Purchase Agreement dated as of September 29, 2023, by and between Harmonic Inc. and JPMorgan Chase Bank, N.A.
10.17 (xxviii)	Credit Agreement, dated as of December 21, 2023, by and among Harmonic Inc., the lenders party thereto and Citibank, N.A., as administrative agent, swingline lender and L/C issuer
10.18(xxiv)	Cooperation Agreement, dated as of April 9, 2021, by and between Harmonic Inc. And Scopia Capital Management LP.
21.1	Subsidiaries of Harmonic Inc.
23.1	Consent of Independent Registered Public Accounting Firm
31.1	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
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
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
97.1	Compensation Recovery Policy dated October 30, 2023
101	The following materials from Registrant's Annual Report on Form 10-K for the year ended December 31, 2023, formatted in Inline Extensible Business Reporting Language (XBRL) includes: Consolidated Balance Sheets at December 31, 2023 and December 31, 2022; (ii) Consolidated Statements of Operations for the Years Ended December 31, 2023, December 31, 2022 and December 31, 2021; (iii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2023, December 31, 2022 and December 31, 2021; (iv) Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2023, December 31, 2022 and December 31, 2021; (v) Consolidated Statements of Cash Flows for the Years Ended December 31, 2023, December 31, 2022 and December 31, 2021; and (vi) Notes to Consolidated Financial Statements.
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

* Indicates a management contract or compensatory plan or arrangement relating to executive officers or directors of the Company.

† Registrant has omitted portions of this exhibit and filed such exhibit separately with the Securities and Exchange Commission pursuant to a grant of confidential treatment under Rule 406 promulgated under the Securities Act.

- (i) Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2001.
- (ii) Previously filed as an exhibit to the Company's Quarterly Report on Form 10-Q for the three months ended September 29, 2023.
- (iii) Previously filed as an exhibit to the Company's Registration Statement on Form S-1 No. 33-90752.
- (iv) Previously filed as an exhibit to the Company's Current Report on Form 8-K dated July 25, 2002.
- (v) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on September 16, 2019.
- (vi) Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
- (vii) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on September 16, 2019.
- (viii) Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2019.
- (ix) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on June 2, 2020.
- (x) Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
- (xi) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on June 2, 2020.
- (xii) Previously filed as an exhibit to the Company's Registration Statement on Form S-1 No. 33-90752.
- (xiii) Previously filed as an exhibit to the Company's Registration Statement on Form S-8, dated August 22, 2022.
- (xiv) Previously filed as an exhibit to the Company's Registration Statement on Form S-8, dated August 20, 2021.
- (xv) Previously filed as an exhibit to the Company's Registration Statement on Form S-8, dated August 22, 2022.
- (xvi) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on March 26, 2018.

- (xvii) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on March 26, 2018.
- (xviii) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on May 22, 2023.
- (xix) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on May 22, 2023.
- (xx) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on December 6, 2023.
- (xxi) Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
- (xxii) Previously filed as an exhibit to the Company's Current Annual Report on Form 10-K for the year ended December 31, 2008.
- (xxiii) Previously filed as an exhibit to the Company's Current Annual Report on Form 10-K for the year ended December 31, 2008.
- (xxiv) Previously filed as an exhibit to the Company's Current Annual Report on Form 10-K for the year ended December 31, 2008.
- (xxv) Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
- (xxvi) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on October 4, 2023.
- (xxvii) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on October 4, 2023.
- (xxviii) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on December 21, 2023.
- (xxix) Previously filed as an exhibit to the Company's Current Report on Form 8-K filed on April 12, 2021.

Item 16. *FORM 10-K SUMMARY*

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15 (d) of the Securities Exchange Act of 1934, the Registrant, Harmonic Inc., a Delaware corporation, has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Jose, State of California, on February 16, 2024.

HARMONIC INC.

By: /s/ PATRICK J. HARSHMAN
Patrick J. Harshman
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ PATRICK J. HARSHMAN</u> (Patrick J. Harshman)	President & Chief Executive Officer (Principal Executive Officer)	February 16, 2024
<u>/s/ WALTER JANKOVIC</u> (Walter Jankovic)	Chief Financial Officer (Principal Financial and Accounting Officer)	February 16, 2024
<u>/s/ PATRICK GALLAGHER</u> (Patrick Gallagher)	Chairperson	February 16, 2024
<u>/s/ SUSAN G. SWENSON</u> (Susan G. Swenson)	Director	February 16, 2024
<u>/s/ MITZI REAUGH</u> (Mitzi Reaugh)	Director	February 16, 2024
<u>/s/ DAVID KRALL</u> (David Krall)	Director	February 16, 2024
<u>/s/ DEBORAH L. CLIFFORD</u> (Deborah L. Clifford)	Director	February 16, 2024
<u>/s/ SOPHIA KIM</u> (Sophia Kim)	Director	February 16, 2024

HARMONIC INC. AND SUBSIDIARIES
SUBSIDIARIES OF THE REGISTRANT

The following table lists the direct and indirect subsidiaries of Harmonic Inc. as of December 31, 2023:

Name	State or Other Jurisdiction of Incorporation or Organization
Harmonic Delaware, L.L.C.	U.S.A.
Harmonic Germany GmbH	Germany
Harmonic Japan GK	Japan
Harmonic India Private Limited	India
Harmonic International GmbH	Switzerland
Harmonic International Inc	U.S.A.
Harmonic Lightwaves (Israel) Ltd	Israel
Harmonic Singapore P.T.E. Ltd.	Singapore
Harmonic Spain SL	Spain
Harmonic Technologies (HK) Limited	Hong Kong
Harmonic (UK) Limited	United Kingdom
Harmonic Video Networks Ltd.	Israel
Horizon Acquisition Ltd	Israel
Harmonic Brasil LTDA	Brazil
Harmonic S.R.L.	Argentina
Harmonic Mexico International	Mexico
Harmonic Video Networks Malaysia Sdn Bhd	Malaysia
Harmonic International Australia Pty Ltd	Australia
Harmonic Italia Srl	Italy
Financiere Kepler SAS	France
Harmonic France SAS	France
Thomson Video Networks India Private Ltd	India
Harmonic Technologies (Canada)	Canada

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements (Form S-8 Nos. 333-38025, 333-65051, 333-86649, 333-84720, 333-91464, 333-116467, 333-136425, 333-154715, 333-159877, 333-167197, 333-176211, 333-182931, 333-192089, 333-200032, 333-207866, 333-212242, 333-218902, 333-225874, 333-232431, 333-244390, 333-258980, 333-267002, and 333-275317) of Harmonic, Inc. of our reports dated February 16, 2024, with respect to the consolidated financial statements of Harmonic, Inc. and the effectiveness of internal control over financial reporting of Harmonic, Inc. included in this Annual Report (Form 10-K) of Harmonic, Inc. for the year ended December 31, 2023.

/s/ Ernst & Young LLP

San Jose, California
February 16, 2024

HARMONIC INC.**CERTIFICATION**

I, Patrick J. Harshman, certify that:

1. I have reviewed this Annual Report on Form 10-K of Harmonic 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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth 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.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 16, 2024

By: /s/ Patrick J. Harshman
Patrick J. Harshman
President and Chief Executive Officer
(Principal Executive Officer)

HARMONIC INC.**CERTIFICATION**

I, Walter Jankovic, certify that:

1. I have reviewed this Annual Report on Form 10-K of Harmonic 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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth 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.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 16, 2024

By: /s/ Walter Jankovic
Walter Jankovic
Chief Financial Officer

HARMONIC INC.
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

As of the date hereof, I, Patrick J. Harshman, President and Chief Executive Officer of Harmonic Inc. (the “Company”), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the annual report of the Company on Form 10-K for the fiscal year ended December 31, 2023, as filed with the Securities and Exchange Commission (the “Report”), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company. This written statement is being furnished to the Securities and Exchange Commission as an exhibit accompanying such Report and shall not be deemed filed pursuant to the Securities Exchange Act of 1934, as amended.

Date: February 16, 2024

/s/ Patrick J. Harshman

Patrick J. Harshman
President and Chief Executive Officer

HARMONIC INC.
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

As of the date hereof, I, Walter Jankovic, Chief Financial Officer of Harmonic Inc. (the “Company”), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the annual report of the Company on Form 10-K for the fiscal year ended December 31, 2023, as filed with the Securities and Exchange Commission (the “Report”), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company. This written statement is being furnished to the Securities and Exchange Commission as an exhibit accompanying such Report and shall not be deemed filed pursuant to the Securities Exchange Act of 1934, as amended.

Date: February 16, 2024

/s/ Walter Jankovic

Walter Jankovic
Chief Financial Officer

HARMONIC INC.**COMPENSATION RECOVERY POLICY**

As adopted on October 30, 2023

Harmonic Inc. (the “**Company**”) is committed to strong corporate governance. As part of this commitment, the Compensation Committee of the Company’s Board of Directors (the “**Committee**”) has adopted this clawback policy called the Compensation Recovery Policy (the “**Policy**”). The Policy is intended to further the Company’s pay-for-performance philosophy and to comply with applicable law by providing for the reasonably prompt recovery of certain executive compensation in the event of an Accounting Restatement. Capitalized terms used in the Policy are defined below, and the definitions have substantive impact on its application so reviewing them carefully is important to your understanding.

The Policy, which was approved as set forth above, is intended to comply with Section 10D of the Securities Exchange Act of 1934 (the “**Exchange Act**”), with Exchange Act Rule 10D-1 and with the listing standards of the national securities exchange (the “**Exchange**”) on which the securities of the Company are listed. The Policy will be interpreted in a manner that is consistent with the requirements of Section 10D of the Exchange Act, Exchange Act Rule 10D-1 and with the listing standards of the Exchange, including any interpretive guidance provided by the Exchange.

In summary, the Policy provides rules related to the reasonably prompt recovery of certain incentive-based compensation received by Executive Officers. With limited exceptions, which are detailed below, the application of the Policy to Executive Officers is not discretionary and applies without regard to whether an Executive Officer was at fault, except to the limited extent provided below.

Persons Covered by the Policy

The Policy is binding and enforceable against all Executive Officers. “**Executive Officer**” means each individual who is or was ever designated as an “officer” by the Board in accordance with Exchange Act Rule 16a-1(f). Each Executive Officer will be required to sign and return to the Company an acknowledgement that such Executive Officer will be bound by the terms and comply with the Policy. The failure to obtain such acknowledgement will have no impact on the applicability or enforceability of the Policy.

Administration of the Policy

The Committee has full delegated authority to administer the Policy. The Committee is authorized to interpret and construe the Policy and to make all determinations necessary, appropriate, or advisable for the administration of the Policy. In addition, if determined in the discretion of the Board, the Policy may be administered by the independent members of the Board or another committee of the Board made up of independent members of the Board, in which case all references to the Committee will be deemed to refer to the independent members of the Board or the other Board committee. All determinations of the Committee will be final and binding and will be given the maximum deference permitted by law.

Events Requiring Application of the Policy

If the Company is required to prepare an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements, or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period (an “**Accounting Restatement**”), then the Committee must determine what compensation, if any, must be recovered.

Compensation Covered by the Policy

The Policy applies to all **Incentive-Based Compensation** (certain terms used in this Section are defined below) that is **Received** on or after October 2, 2023 (the “**Effective Date**”), while the Company has a class of securities listed on a national securities exchange, and during the **Covered Period** by a person who was an Executive Officer during the Covered Period and during the performance period for the Incentive-Based Compensation (“**Clawback Eligible Incentive-Based Compensation**”). The Incentive-Based Compensation that must be recovered is the amount of Clawback Eligible Incentive-Based Compensation that exceeds the amount of Clawback Eligible Incentive-Based Compensation that otherwise would have been Received had such Clawback Eligible Incentive-Based Compensation been determined based on the restated amounts (such compensation, as computed without regard to any taxes paid, the “**Excess Compensation**,” is referred to in the listings standards as “erroneously awarded incentive-based compensation”).

To determine the amount of Excess Compensation for Incentive-Based Compensation based on stock price or total shareholder return, where it is not subject to mathematical recalculation directly from the information in an Accounting Restatement, the amount must be based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or total shareholder return upon which the Incentive-Based Compensation was received and the Company must maintain documentation of the determination of that reasonable estimate and provide such documentation to the Exchange.

“**Incentive-Based Compensation**” means any compensation that is granted, earned, or vested based wholly or in part upon the attainment of a Financial Reporting Measure. For the avoidance of doubt, no compensation that is potentially subject to recovery under the Policy will be earned until the Company’s right to recover under the Policy has lapsed. The following items of compensation are not Incentive-Based Compensation under the Policy: salaries, bonuses paid solely at the discretion of the Committee or Board that are not paid from a bonus pool that is determined by satisfying a Financial Reporting Measure, bonuses paid solely upon satisfying one or more subjective standards and/or completion of a specified employment period, non-equity incentive plan awards earned solely upon satisfying one or more strategic measures or operational measures, and equity awards for which the grant is not contingent upon achieving any Financial Reporting Measure performance goal and vesting is contingent solely upon completion of a specified employment period (e.g., time-based vesting equity awards) and/or attaining one or more non-Financial Reporting Measures.

“**Financial Reporting Measures**” are measures that are determined and presented in accordance with the accounting principles used in preparing the Company’s financial statements, and any measures that are derived wholly or in part from such measures. Stock price and total shareholder return are also Financial Reporting Measures. A Financial Reporting Measure need not be presented within the financial statements or included in a filing with the Securities and Exchange Commission.

Incentive-Based Compensation is “**Received**” under the Policy in the Company’s fiscal period during which the Financial Reporting Measure specified in the Incentive-Based Compensation award is attained, even if the payment, vesting, settlement or grant of the Incentive-Based Compensation occurs after the end of that period.

“**Covered Period**” means the three completed fiscal years immediately preceding the Accounting Restatement Determination Date. In addition, Covered Period can include certain transition periods resulting from a change in the Company’s fiscal year. The Company’s obligation to recover Excess Compensation is not dependent on if or when the restated financial statements are filed.

“**Accounting Restatement Determination Date**” means the earliest to occur of: (a) the date the Board, a committee of the Board, or one or more of the officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement; and (b) the date a court, regulator, or other legally authorized body directs the Company to prepare an Accounting Restatement.

Repayment of Excess Compensation

The Company must recover such Excess Compensation reasonably promptly and Executive Officers are required to repay Excess Compensation to the Company. Subject to applicable law, the Company may recover such Excess Compensation by requiring the Executive Officer to repay such amount to the Company by direct payment to the Company or such other means or combination of means as the Committee determines to be appropriate (these determinations do not need to be identical as to each Executive Officer). These means may include:

- (1) requiring reimbursement of cash Incentive-Based Compensation previously paid;
- (2) seeking recovery of any gain realized on the vesting, exercise, settlement, sale, transfer, or other disposition of any equity-based awards;
- (3) offsetting the amount to be recovered from any unpaid or future compensation to be paid by the Company or any affiliate of the Company to the Executive Officer;
- (4) cancelling outstanding vested or unvested equity awards; and/or
- (5) taking any other remedial and recovery action permitted by law, as determined by the Committee.

The repayment of Excess Compensation must be made by an Executive Officer notwithstanding any Executive Officer's belief (whether legitimate or non-legitimate) that the Excess Compensation had been previously earned under applicable law and therefore is not subject to clawback.

In addition to its rights to recovery under the Policy, the Company or any affiliate of the Company may take any legal actions it determines appropriate to enforce an Executive Officer's obligations to the Company or to discipline an Executive Officer, including (without limitation) termination of employment, institution of civil proceedings, reporting of misconduct to appropriate governmental authorities, reduction of future compensation opportunities or change in role. The decision to take any actions described in the preceding sentence will not be subject to the approval of the Committee and can be made by the Board, any committee of the Board, or any duly authorized officer of the Company or of any applicable affiliate of the Company.

Limited Exceptions to the Policy

The Company must recover the Excess Compensation in accordance with the Policy except to the limited extent that the conditions set forth below are met, and the Committee determines that recovery of the Excess Compensation would be impracticable:

- (1) The direct expense paid to a third party to assist in enforcing the Policy would exceed the amount to be recovered. Before reaching this conclusion, the Company must make a reasonable attempt to recover such Excess Compensation, document such reasonable attempt(s) to recover, and provide that documentation to the Exchange;
- (2) Recovery would violate a law in the country where the Company was incorporated that was adopted prior to November 28, 2022. Before making this determination, the Company must obtain an opinion of home country counsel, acceptable to the Exchange, that recovery would result in such a violation, and must provide such opinion to the Exchange; or
- (3) Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the legal requirements as such.

Other Important Information in the Policy

The Policy is in addition to the requirements of Section 304 of the Sarbanes-Oxley Act of 2002 that are applicable to the Company's Chief Executive Officer and Chief Financial Officer, as well as any other applicable laws, regulatory requirements, rules, but the Policy supersedes in full all of the clawback policies of the Company that were in effect prior to the Effective Date to the extent such policies were applicable with respect to Executive Officers and the operative portions of such policies shall have no further force or effect on or after the Effective Date.

Notwithstanding the terms of any of the Company's organizational documents (including, but not limited to, the Company's bylaws), any corporate policy or any contract (including, but not limited to, any indemnification agreement), neither the Company nor any affiliate of the Company will indemnify or provide advancement for any Executive Officer against any loss of Excess Compensation. Neither the Company nor any affiliate of the Company will pay for or reimburse insurance premiums for an insurance policy that covers potential recovery obligations. In the event the Company is required to recover Excess Compensation from an Executive Officer who is no longer an employee pursuant to the Policy, the Company will be entitled to seek such recovery in order to comply with applicable law, regardless of the terms of any release of claims or separation agreement such individual may have signed.

The Committee or Board may review and modify the Policy from time to time.

If any provision of the Policy or the application of any such provision to any Executive Officer is adjudicated to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions of the Policy or the application of such provision to another Executive Officer, and the invalid, illegal or unenforceable provisions will be deemed amended to the minimum extent necessary to render any such provision or application enforceable.

The Policy will terminate and no longer be enforceable when the Company ceases to be listed issuer within the meaning of Section 10D of the Exchange Act.

ACKNOWLEDGEMENT

- I acknowledge that I have received and read the Compensation Recovery Policy (the “**Policy**”) of Harmonic Inc. (the “**Company**”).
- I understand and acknowledge that the Policy applies to me, and all of my beneficiaries, heirs, executors, administrators or other legal representatives and that the Company’s right to recovery in order to comply with applicable law will apply, regardless of the terms of any release of claims or separation agreement I have signed or will sign in the future.
- I agree to be bound by and to comply with the Policy and understand that determinations of the Committee (as such term is used in the Policy) will be final and binding and will be given the maximum deference permitted by law.
- I understand and agree that my current indemnification rights, whether in an individual agreement or the Company’s organizational documents, exclude the right to be indemnified for amounts required to be recovered under the Policy.
- I understand that my failure to comply in all respects with the Policy is a basis for termination of my employment with the Company and any affiliate of the Company as well as any other appropriate discipline.
- I understand that neither the Policy, nor the application of the Policy to me, gives rise to a resignation for good reason (or similar concept) by me under any applicable employment agreement or arrangement.
- I acknowledge that if I have questions concerning the meaning or application of the Policy, it is my responsibility to seek guidance from the Compliance Officer, Human Resources or my own personal advisers.
- I acknowledge that neither this Acknowledgement nor the Policy is meant to constitute an employment contract.

Please review, sign and return this form to Human Resources.

Executive

(*print name*)

(*signature*)

(*date*)

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