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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549  
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FORM 10-K/2A  
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AMENDMENT NO. 2

(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, 1998

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

COMMISSION FILE NO. 0-25826

HARMONIC INC.  
(FORMERLY, HARMONIC LIGHTWAVES, INC.)  
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE  
(STATE OF INCORPORATION)

77-0201147  
(I.R.S. EMPLOYER IDENTIFICATION NO.)

549 BALTIC WAY  
SUNNYVALE, CA 94089  
(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: NONE

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:  
COMMON STOCK, PAR VALUE \$.001 PER SHARE

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 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K/2A or any amendment to this Form 10-K/2A. \_\_\_\_\_

Based on the closing sale price of the Common Stock on the NASDAQ National

Market System on March 1, 1999, the aggregate market value of the voting stock held by non-affiliates of the Registrant was \$85,570,254. Shares of Common Stock held by each 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.

The number of shares outstanding of the Registrant's Common Stock, \$.001 par value, was 23,939,552 at March 1, 1999.

DOCUMENTS INCORPORATED BY REFERENCE

DOCUMENT -----	LOCATION IN FORM 10-K/2A -----
Portions of the Proxy Statement for the 1999 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, 1998)	Part III

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The Board Compensation Committee Report and the Performance Graph to be included with the 1999 Proxy Statement shall not be deemed to be "soliciting material" or to be "filed" with the Commission or otherwise incorporated by reference into this report.  
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PART I

ITEM 1. BUSINESS

This Annual Report on Form 10-K/2A contains forward-looking statements that involve risks and uncertainties. The statements contained herein that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, including without limitation statements regarding Harmonic's expectations, beliefs, intentions or strategies regarding the future. All forward-looking statements included in this document or incorporated by reference herein are based on information available to Harmonic on the date hereof, and Harmonic assumes no obligation to update any such forward-looking statements. Harmonic's actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including those set forth in "Management's Discussion and Analysis of Financial Condition and Results of Operations -- Factors That May Effect Future Results of Operations."

OVERVIEW

Harmonic designs, manufactures and markets digital and fiber optic systems for delivering video, voice and data services over cable, satellite and wireless networks. Our advanced solutions enable cable television and other network operators to provide a range of broadcast and interactive broadband services that include high-speed Internet access, telephony and video on demand. We offer a broad range of fiber optic transmission and digital headend products for hybrid fiber coax, satellite and wireless networks, and our acquisition of New Media Communication Ltd. in January 1998 has allowed us to develop and expand our product offerings to include high-speed data delivery software and hardware.

On March 23, 1999, Harmonic Lightwaves, Inc. announced the merger of its subsidiary, Harmonic Inc. with and into Harmonic Lightwaves, Inc. pursuant to a Certificate of Ownership and Amendment dated March 22, 1999. Pursuant to this merger, Harmonic Lightwaves, Inc. changed its corporate name to Harmonic Inc.

## INDUSTRY BACKGROUND

### Demand for Broadband Access

The demand for broadband access has increased significantly in recent years due in large part to the dramatic growth of the Internet, which has facilitated commercial applications such as telecommuting and electronic commerce as well as widespread use of the Web for communicating and accessing information. IDC estimates that the number of devices that access the Internet worldwide will increase from approximately 78 million at the end of 1997 to approximately 515 million by the end of 2002. Rapid growth in the number of Internet users and the demand for more bandwidth-intensive video, voice and data content has strained existing communications networks and created bottlenecks, especially in the "last mile" of the communications infrastructure where homes connect to the local network. Increasingly, individuals who experience the value of high-speed Internet access from their work locations are demanding similar levels of speed from their home or laptop connection. Access to the Internet over the last mile using standard telephone dial-up connections, however, has been limited generally to speeds of up to 56Kbps.

### Competition and Deregulation

Increased demand for high-speed broadband access, combined with recent and proposed regulatory reform, has spurred competition among communications service providers worldwide to offer combinations of video, voice and data services. Historically, U.S. long distance carriers and regional Bell operating companies, or RBOCs, were generally limited to providing only telephony services in the residential market. Cable television multiple system operators, or MSOs, also were generally limited to providing video programming. As a result, neither the RBOCs nor the cable operators had networks conducive to providing high-speed data services to residential subscribers. The Telecommunications Act of 1996, however, permitted cable operators, long-distance carriers and local exchange carriers such as the RBOCs to enter each other's markets. As a

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result, AT&T has acquired TCI and announced plans to offer broadband and interactive services, including telephony, on a broad scale over TCI's cable systems in the next few years. Similarly, RBOCs are deploying various digital subscriber line technologies, or xDSL, for high-speed data services over their existing copper networks. A number of RBOCs also have deployed alternative delivery systems such as hybrid fiber coax, or HFC, fiber to the curb and wireless for data and video transmission. In certain major metropolitan areas, new carriers have entered the market. For example, companies such as RCN and 21st Century are building state of the art HFC networks to compete with incumbent RBOCs and cable operators.

Similar deregulation of telecommunications and broadcasting abroad has fostered substantial growth and competition in many foreign communications markets. The emergence of direct broadcast satellite, or DBS, systems internationally and in the United States has subjected cable operators to increasing competitive pressures. DBS systems offer consumers up to 200 channels of digital video programming. In addition, operators in other countries with more established DBS infrastructures are introducing data services to meet the growing demand from residential and small business customers for Internet access.

### Response of the Cable Operators

To address increasing competition and demand for high-speed broadband services, cable operators are introducing voice and data services in addition to video. By offering bundled packages of broadband services, cable operators are

seeking to obtain a competitive advantage over telephone companies and DBS providers and to create additional revenue streams.

In order to provide high-speed Internet access, cable operators are beginning to deploy cable modems in a number of major metropolitan areas. Cable modems provide significantly faster and easier access to the Internet than traditional 28Kbps or 56Kbps telephone modems. Cable modems are frequently offered in conjunction with Internet content services such as @Home or Road Runner by cable operators, which seek to accelerate customer adoption by providing a complete hardware and content package. The number of cable modem subscribers in the U.S. at the end of 1998 was estimated to be approximately 500,000, compared to approximately 100,000 in 1997. Forecasts from Paul Kagan Associates suggest that over five million cable modems will be deployed by 2001.

Similarly, cable operators are upgrading and rebuilding their networks to offer digital video, which enables cable operators to provide more channels and better picture quality. Paul Kagan Associates estimated that of the approximately 65 million U.S. cable subscribers, approximately one million homes would install digital set top boxes by the end of 1998 and approximately 7.7 million homes will install digital set top boxes by the end of 2000. Additionally, the FCC has mandated that broadcasters convert to digital format by 2006. Operators, nevertheless, will have to work with both analog and digital video signals for many years.

As telephone carriers are planning to offer broadband voice, data and video services, cable operators are also upgrading and building out their HFC network architectures to provide telephony services. AT&T has set targets of 30% local telephone market share in its initial deployments in TCI systems. In joint venture agreements with partners such as Time Warner, AT&T has guaranteed minimum levels of up to 25% telephony penetration within six years.

The ability of cable operators to deliver digital video, voice and high-speed data services on a broad scale, however, is constrained by the designs of their legacy networks. These networks, which pass more than 90% of U.S. homes, were built initially for one-way broadcast analog television and require substantial upgrades to make them capable of reliably supporting two-way digital services, such as high-speed Internet access and telephony.

#### Development of the Cable System Network Architecture

The introduction and deployment of hybrid fiber coax network architectures has significantly increased network capacity, quality and reliability. The higher bandwidth of fiber can increase capacity to up to 110 analog channels. Video compression technologies can further extend the capacity of cable television systems to several hundred channels. However, to accommodate the interactive nature of telephony and

Internet services, these networks require installation of return path equipment for the transmission of video, voice and data on the return path from the subscriber to the headend. Additionally, the introduction of telephony service will require the deployment of fiber closer to the subscriber and therefore increase the amount of optical fiber and fiber optic equipment in an HFC network. In order to reliably deliver telephony and data services for large numbers of subscribers, optical fiber will need to serve approximately 50-home groups, as opposed to the 500 to 1,000 home groups that are common in today's networks.

In addition to upgrading and extending network infrastructure with fiber optics, it will be necessary for cable operators to invest in new digital headend equipment that can receive and process content from a variety of sources in different formats and protocols. Interfaces to wired and wireless, analog and digital, and local and remote sources will increase the complexity of local headends. Moreover, the desire to tailor services to specific groups of customers will require flexibility and ease of configuration at the local

network headend.

#### The Market Opportunity

The upgrade and extension of existing networks to facilitate high-speed broadband video, voice and data services require substantial expenditure and the replacement of significant portions of the transmission network. To date, cable operators have been slow to upgrade their cable plants and network infrastructure due to capital constraints and the need to achieve significant economies of scale to justify such expenditures. Competitive pressures and the desire to capture new revenue opportunities, however, have induced major cable operators to focus on achieving economies of scale by increasing the size of their cable systems. This has been accomplished largely through cable system exchanges and the acquisition of smaller cable operators and independent operators, many of which could not afford the significant costs necessary to upgrade their systems. Having achieved a significant degree of consolidation, many cable operators are now turning their attention to investment in new infrastructure equipment.

As a result of growing demand for broadband services, development and deployment of enabling technologies, significant regulatory change, rapidly increasing competition and considerable industry consolidation, substantial new investments in the cable industry are providing the capital necessary to accelerate the upgrade of the cable infrastructure. Recent examples of this increased investment activity include:

- In 1997, Microsoft invested \$1 billion in Comcast;
- In 1998, Paul Allen acquired Charter Communications for \$4.5 billion and purchased a controlling interest in Marcus Cable for \$2.8 billion;
- In 1999, AT&T completed the acquisition of TCI for approximately \$60 billion and has entered into joint ventures with Time Warner and a number of smaller cable operators.

As cable operators upgrade their networks to meet market demands, we believe that increased recognition of the value of cable networks as a medium for high-speed, interactive video, voice and data, their strategic access to homes and the improved financial strength of cable operators represent a significant market opportunity for broadband communications equipment vendors. Moreover, we believe that these equipment vendors will also benefit from growth in the services offered by wireless, satellite and other broadband service providers.

#### THE HARMONIC SOLUTION

Harmonic develops, manufactures and markets digital and fiber optic systems for delivering video, voice and data services over cable, wireless and satellite networks. Our technical strengths in optics have allowed us to develop reliable, highly integrated systems that enable cable operators to transport digital video, a greater number of channels and a choice of programming packages over their fiber optic networks. In addition, our advanced solutions enable cable and other network operators to provide a range of broadcast and interactive broadband services that include high-speed Internet access, telephony and video on demand.

Fiber Optics Products. Our optical transmission products, node and return path products, and element management hardware and software allow operators to deliver traditional broadcast video services while

supporting the roll-out of emerging interactive services and managing the fiber network. Our new METROLink dense wave division multiplexing, or DWDM, solution also allows cable operators to provide video, voice and data services directly from the network headend to distributed nodes, thereby simplifying network

architecture and eliminating the need to install complex electronics in multiple hubs, which significantly reduces the size of hubs and the associated building and maintenance costs.

TRANsend Digital Headend System. Our digital TRANsend platform gives cable, wireless and satellite service providers the flexibility to combine and customize content from a variety of sources for seamless integration and delivery of voice, video and data to different subscriber groups. The TRANsend system leverages our expertise in combining and transporting Internet Protocol, or IP, data together with digital video. In addition, the TRANsend platform is designed to be compliant with established international digital video standards, providing interoperability with equipment from other manufacturers, such as set-top boxes.

CyberStream System. Our CyberStream product line, which we developed and introduced in 1998 following our purchase of New Media Communication Ltd., provides a low cost, end to end hardware and software solution for high-speed data delivery, primarily over satellite and wireless networks to residential and business users. These products can support transmission rates of up to 48 Megabits per second.

Our products incorporate network management systems employing internally developed hardware and software to monitor and control the network and increase system availability. The "plug and play" design philosophy and network management employed in our products further enhance ease of installation and operation.

#### STRATEGY

The key elements of Harmonic's business strategy are as follows:

Develop New Products to Meet Cable Operators' Emerging Broadband Needs. We will continue to develop products to assist cable operators in the introduction of new broadband services and in the design of new network architectures. We believe that the strength of our core technologies and the expertise of our engineering and manufacturing personnel will contribute to the continued development of products that address customer needs in both their transmission networks and their headends. Our recently introduced DWDM and scaleable node products, for example, illustrate our commitment to assisting our customers to reliably and cost-effectively equip their networks for the deployment of new services. Our digital headend products provide operators with the flexibility to market services tailored to particular groups of subscribers. We will continue to design and manufacture products to meet emerging and existing industry standards to facilitate interoperability with other manufacturers' equipment.

Increase Penetration of Major Cable Operators. The five largest U.S. cable operators, which serve a majority of domestic cable subscribers, have purchased a significant amount of our products. We will continue to leverage our close relationships with these and other cable operators to promote increased usage and deployment of our products, particularly as they upgrade and expand their networks through internal build-out or by acquisition of smaller systems. Our sales force and technical personnel work closely with cable operators as part of the sales process to ensure that our products meet cable operators' evolving application needs and technical specifications. We have reorganized and intend to expand our direct sales force to maintain close contact and further develop our relationships with major cable operators.

Provide Highly Integrated Systems. We provide highly integrated systems that allow network operators to manage increasingly complex networks and thereby reduce maintenance and operating costs. To address cable operators' requirements for comprehensive network and headend solutions, our products include a wide range of forward and return path optical transmitters and receivers and a growing portfolio of products for digital headends. We also incorporate network management functions into all of our products, enabling operators to enhance network reliability and optimize system performance. As operators introduce new services over more complex networks, the need for integration and sophisticated network management is becoming more critical. We also design "plug and play" capabilities into our products, enabling them to be easily installed in an

existing network without complex and lengthy setup procedures.

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Provide Fiber Optic Products to Telephone Companies. As RBOCs begin to upgrade and deploy networks to provide video programming, we seek to provide the high performance transmission systems required for delivery of this service. For example, we have deployed our transmitters and optical amplifiers at one RBOC. Our products are enabling this RBOC to provide video services in addition to voice and high-speed data in a fiber to the curb application. In order to address the needs of telephone company customers, we intend to expand our sales force to support sales to telephone companies or develop a strategic alliance with one or more current suppliers of telephony transmission equipment. We intend to develop closer working relationships with telephone companies as they deploy broadband services.

Expand in Broadband Wireless and Satellite Markets. Through our acquisition of New Media Communication Ltd. in January 1998, we have developed and now offer our CyberStream high-speed, broadband data delivery hardware and software products, which enable satellite and broadband wireless operators as well as cable operators to offer high-speed Internet access and video distribution. In addition, our TRANsend digital headend platform allows wireless and satellite providers to combine content from a variety of sources for seamless integration and delivery of digital video and high-speed data. We intend to expand our presence in these emerging markets as wireless and satellite operators introduce broadband services.

Increase Sales in International Markets. We currently supply products to a number of large international customers, including cable operators in Canada, Europe, Asia and Latin America. We intend to continue to supply complete network and headend solutions to these and other operators in various international markets. Although certain international markets are currently depressed, we believe that many of the same factors which are driving the adoption of broadband services in the U.S. are present in foreign markets and will, in time, result in increasing opportunities for sales in these markets. Over the past year we have added regional sales and support centers in Europe and Asia and we intend to continue to expand our operations internationally to meet market demands.

## PRODUCTS

Harmonic designs, develops, manufactures and markets fiber optic transmission and digital systems, comprised of three product families: fiber optic products, TRANsend digital headend products and CyberStream data delivery products. Our products employ internally developed hardware and software to facilitate a high degree of system integration. The "plug and play" design philosophy and network management employed in our products enhance ease of installation and operation.

## FIBER OPTIC PRODUCTS

We have applied our technical strengths in optics and electronics, including expertise with lasers, modulators, and radio frequency technology, to develop products which provide enhanced network reliability and allow broadband service providers to deliver advanced services, including two-way interactive services. We have provided the operator with end-to-end capability in the fiber portion of the network.

### Optical Transmission Systems

We offer MAXLink transmitters and optical amplifiers, PWRLink transmitters and the METROLink system for a wide range of optical transmission requirements.

MAXLink Transmitters and Optical Amplifiers. The MAXLink transmitters and optical amplifiers operate at a wavelength of 1550nm and serve long-haul applications and fiber dense architectures that are beyond the capability of

1310nm transmitters. This system is suited to evolving cable networks employing such features as redundant rings, hub interconnects and broadcast layer transmission.

PWRLink Transmitters. The PWRLink series of optical transmitters incorporates semiconductor lasers and provides optical transmission primarily for use at a headend or hub for local distribution to optical nodes and for narrowcasting, which is the transmission of programming to a select set of subscribers.

METROLink System. Our METROLink system, the first DWDM system for the cable industry, allows operators to expand the capacity of a single strand of fiber and also to provide high-speed narrowcast services

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directly from the headend to nodes. This ability largely eliminates the need to locate expensive electronic equipment in each network hub, which significantly reduces the size of hubs and the associated building and equipment maintenance costs. By increasing the downstream and upstream capacity of existing optical fiber, METROLink also can eliminate the often significant expense associated with laying additional fiber.

#### Optical Node Receivers, Return Path and Network Management Products

We offer a number of optical nodes, return path transmitters and return path receivers to provide two-way transmission capability. In addition, we offer network management hardware and software to enable the network operator to monitor and control the entire transmission network.

PWRBlazer Optical Node Receivers. Our PWRBlazer optical node receivers convert optical signals received from the transmitters into radio frequency signals for transmission to the home via coaxial cable. We offer a variety of receiver products for applications including indoor and outdoor use, all of which can be fitted to support two-way traffic.

PWRBlazer Scaleable Optical Node. Our PWRBlazer scaleable optical node is a receiver which can be easily adapted to handle increasing traffic over a fiber network without major reconstruction. It is particularly suited to networks that are expected to handle increasing demands for two-way services and can be flexibly configured to support specific operator requirements.

Return Path Transmitters and Receivers. Our return path transmitters support two-way transmission capabilities by sending video, voice and data signals from the optical node to the headend. Signals originating at the home can be sent via the coaxial cable to the optical node and then transmitted in optical form to the headend by the return path transmitter. Our return path receivers operate at the headend to receive return path optical transmission from the return path transmitters.

NETWatch Management System. Our NETWatch management system consists of transponders and network management software. The transponders operate in broadband networks to capture measurement data. Harmonic's software enables the broadband service operator to monitor and control the entire HFC transmission network from a central office or remote locations. Our NETWatch software is designed to be integrated into larger network management systems through the use of simple network management protocol, or SNMP.

#### TRANSEND DIGITAL HEADEND PRODUCTS

Our TRANSEND digital headend platform consists of a number of products for encoding, compressing, multiplexing and modulating digital signals prior to transmission over broadband networks. It also provides interfaces to incoming and outgoing data streams and various protocols and formats.

Video Transport Platform. Our VTP houses configurable combinations of application modules necessary to perform a variety of functions required at a



digital headend. It includes a bus system which routes data and control information between the application modules under network management control.

Encoders. Our encoders convert analog and digital video and audio signals to compressed digital format fully compliant with the MPEG-2 standard.

Integrated Receiver eXchange Modules. Our IRX modules receive a number of individually encoded digital program streams originating from multiple sources.

Multiplexers. Our multiplexer module combines multiple MPEG-2 streams into one transport stream as well as authorizing conditional access.

Modulators. Our modulators accept digital signals for modulation on to a radio frequency carrier for transmission over a broadband network.

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#### CYBERSTREAM PRODUCTS

CyberStream System. This system enables Internet access and high-speed data delivery primarily over satellite or wireless networks to residential and business subscribers. It is capable of supporting transmission rates of up to 48 Megabits per second which enables applications such as video distribution and distance learning. This system includes a headend data encoder, a network management system and an end-user receiver card which is installed in either a PC or our Enterprisel product.

Enterprisel. The Enterprisel is a network router, which interfaces the CyberStream System with a local area network. It provides desktop broadband access by linking high-speed cable, satellite or wireless networks directly to a LAN.

ProCast. Our ProCast system is a software package that allows service providers to distribute multimedia information to selected groups of end-users at pre-authorized service levels.

#### CUSTOMERS

We sell our products to a variety of broadband communications network operators. Set forth below is a representative list of our customers during 1998.

#### UNITED STATES

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Armstrong  
Charter  
Comcast  
Cox  
Jones Intercable  
MediaOne  
RCN  
TCI  
Time-Warner

#### INTERNATIONAL

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A provincial PTT in China  
Golden Channels  
NTL  
Rogers  
Shaw  
Tele-2  
Telewest  
Videotron

Historically, the majority of our sales have been to relatively few customers, and we expect this customer concentration to continue in the foreseeable future. In 1998, sales to TCI accounted for 17% of net sales and sales to a Chinese distributor accounted for 11% of net sales. In 1997, Capella (our Canadian distributor) accounted for 17% of net sales. In 1996, sales to Tratec (our former U.K. distributor), Capella, and ANTEC accounted for 15%, 15%, and 13%, respectively, of net sales. No other customer accounted for more than

10% of our net sales in 1998, 1997 or 1996. The loss of a significant customer or any reduction in orders by any significant customer, or our failure to qualify our products with a significant cable operator could adversely affect our business and operating results.

Sales to customers outside of the United States in 1998, 1997 and 1996 represented 43%, 59% and 57% of net sales, respectively. We expect international sales to continue to account for a substantial portion of our net sales for the foreseeable future. International sales are subject to a number of risks, including changes in foreign government regulations and telecommunications standards, import and export license requirements, tariffs, taxes and other trade barriers, fluctuations in foreign currency exchange rates, difficulty in collecting accounts receivable, difficulty in staffing and managing foreign operations, managing distributor relations and political and economic instability. In recent periods certain Asian and Latin American currencies have devalued significantly in relation to the U.S. dollar. We continue to evaluate the effect of recent developments in Asia and Latin America on our business, and we cannot assure you that our sales will not be materially adversely affected by such developments. We also cannot assure you that international markets will continue to develop or that we will receive future orders to supply our products in international markets at rates equal to or greater than those experienced in recent periods. See "Risk Factors -- We depend on our international sales and are subject to the risks associated with international operations."

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#### SALES AND MARKETING

We sell our products in the United States through our own direct sales force which is organized geographically to support major network operators at both the corporate level and in their individual systems. Our sales force is supported by a highly qualified technical staff. Together, they work closely with customers to design systems and develop technical proposals to optimize system performance and economic benefits for the operators. The technical group also assists customers with installation and post-sale support.

International sales are made primarily to distributors, which are generally responsible for importing the products and providing installation and technical support and service to customers in their territory. However, a small direct sales force, based in Sunnyvale, California, and in Europe and Asia is responsible for account management and providing high-level technical support directly to customers as well as to distributors. Our technical group also supports the international sales force.

Because of the cable industry's 24 hour programming requirements, we provide round-the-clock technical support, both directly and through our distributors. We provide training for our customers and distributors, as required, both in our facilities and on-site.

Our marketing organization develops strategies for product lines and, in conjunction with our sales force, identifies 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. Our marketing organization is also responsible for setting price levels, demand forecasting and general support of the sales force, particularly at major accounts. We have many programs in place to heighten industry awareness of Harmonic and our products, including participation in technical conferences, publication of articles in industry journals and exhibiting at trade shows.

#### MANUFACTURING AND SUPPLIERS

Our manufacturing processes consist primarily of integration, final assembly and test, performed by highly trained personnel employing technologically advanced electronic equipment and proprietary test programs. The manufacturing of our products and subassemblies is a complex process and we cannot assure you that we will not experience production problems or

manufacturing delays in the future. Because we utilize our own manufacturing facility for this production, and because such manufacturing capabilities are not readily available from third parties, any interruption in operations could materially and adversely affect our business and operating results.

We use third party contract manufacturers like Sanmina to assemble certain standard parts for our products, including such items as printed circuit boards, metal chassis and power supplies. We intend to subcontract an increasing number of tasks to third parties in the future. Our increasing reliance on subcontractors involves several risks, and we may not be able to obtain an adequate supply of components, subassemblies and modules on a timely basis.

Some components, subassemblies and modules necessary for the manufacture and integration of our products are obtained from a sole supplier or a limited group of suppliers. In particular, we rely on Fujitsu as a major source of lasers for our PWRLink and return path transmitters, for which there are limited alternative suppliers. In addition, certain optical components used in our METROLink and MAXLink products are currently available only from Uniphase Corporation and JDS FITELE, which recently announced their intention to merge. Although we have qualified alternative suppliers for lasers, in the event that the supply of optical components is interrupted for any reason, products from alternative suppliers are unlikely to be immediately available in sufficient volume to meet our production needs. Further, sole suppliers are providing certain key elements of our digital products. The reliance on sole or limited suppliers, particularly foreign suppliers, involves several risks, including a potential inability to obtain an adequate supply of required components or subassemblies and reduced control over pricing, quality and timely delivery of components. Although we attempt to minimize supply risks by holding safety stocks and continuously evaluating other sources, any interruption in supply could materially adversely affect our business and operating results. We do not maintain long-term agreements with any of our suppliers. While we have been able historically to obtain

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adequate supplies of components in a timely manner from our principal suppliers, we cannot assure you that we will be able to obtain adequate supplies in the future. Because the purchase of certain key components involves long lead times, in the event of unanticipated increases in demand for our products, we could be unable to manufacture certain products in a quantity sufficient to meet our customers' demand. If we cannot obtain adequate deliveries of key components we may not be able to ship products on a timely basis. Delays in shipment could damage relationships with current and prospective customers and could harm our business and operating results.

#### INTELLECTUAL PROPERTY

We currently hold 12 issued United States patents and 9 issued foreign patents, and have a number of patent applications pending. Although we attempt to protect our intellectual property rights through patents, trademarks, copyrights, maintaining certain technology as trade secrets and other measures, we cannot assure you that any patent, trademark, copyright or other intellectual property right owned by us will not be invalidated, circumvented or challenged, that such intellectual property right 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 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 certain foreign countries in which we do business or intend to do business in the future.

We believe that the future success of our business will depend on our ability to translate the technological expertise and innovation of our personnel into new and enhanced products. We generally 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. Nevertheless, we cannot assure you 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 resources and could harm our business and operating results.

In order to successfully develop and market our planned products for digital headend applications, 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 will be negotiated on terms acceptable to us, 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 cause our business to suffer.

As is common in our industry, we have from time to time received notification from other companies of intellectual property rights held by those companies upon which our products may infringe. Any claim or litigation, with or without merit, could be costly, time consuming and could result in a diversion of management's attention, which could harm our business. If we were found to be infringing on the intellectual property rights of any third party, we could be subject to liabilities for such infringement, which could be material, and could be required to seek licenses from other companies or to refrain from using, manufacturing or selling certain products or using certain processes. Although holders of patents and other intellectual property rights often offer licenses to their patent or other intellectual property rights, no assurance can be given that licenses would be offered, that the terms of any offered license would be acceptable to us or that failure to obtain a license would not cause our operating results to suffer.

#### BACKLOG

We schedule production of our systems based upon our backlog, informal commitments from customers and sales projections. Our backlog consists of firm purchase orders by customers for delivery within the next twelve months. At December 31, 1998, order backlog amounted to \$20.8 million, compared to \$5.5 million at December 31, 1997. Anticipated orders from customers may fail to materialize and delivery schedules may be

deferred or canceled for a number of reasons, including reductions in capital spending by cable television operators or changes in specific customer requirements. In addition, due to weather-related seasonal factors and annual capital spending budget cycles at many major end-users, our backlog at December 31, 1998 or any other date, is not necessarily indicative of actual sales for any succeeding period.

#### COMPETITION

The markets for cable television equipment and other broadband communications equipment are extremely competitive and characterized by rapid technological change. The principal competitive factors in these markets include product performance, reliability, price, breadth of product line, network management capabilities, sales and distribution capability, technical support and service and relationships with network operators. Certain of these factors are outside of our control.

Our competitors for fiber optic transmission products include established suppliers of cable television and telecommunications equipment such as ADC Telecommunications, ANTEC, General Instrument, Philips and Scientific-Atlanta, as well as a number of smaller, more specialized companies. For digital headend

products, our competitors include many of the same competitors as in fiber optic transmission products, and a number of new competitors, including Divicom, a division of C-Cube and Lucent Technologies. Competitors for CyberStream products in the satellite and wireless market include Broadlogic, Echostar, Hybrid Networks, SAGEM and Philips. Most of our competitors are substantially larger and have greater financial, technical, marketing and other resources than we do. Many of our larger competitors are in a better position to withstand any significant reduction in capital spending by cable television operators and other broadband service providers. In addition, many of our competitors have more long-standing and established relationships with domestic and foreign cable operators than we do.

#### RESEARCH AND DEVELOPMENT

We have historically devoted a significant amount of our resources to research and development. Research and development expenses in 1998, 1997 and 1996 were \$13.5 million, \$11.7 million, and \$9.2 million, respectively. We expect that research and development expenses will continue to increase in the future.

Our success in designing, developing, manufacturing and selling new or enhanced products will depend on a variety of factors, including the identification of market demand for new products, product selection, timely implementation of 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, or that new products developed by us will achieve market acceptance. Our failure to successfully develop and introduce new products could harm our business and operating results.

#### EMPLOYEES

As of December 31, 1998, we employed a total of 293 people, including 101 in manufacturing operations, 82 in research and development, 77 in sales and marketing and 33 in a general and administrative capacity. We also employ a number of temporary employees and consultants on a contract basis. None of our employees is represented by a labor union with respect to his or her employment by Harmonic. We have not experienced any work stoppages and we consider our relations with our employees to be good. Our future success will depend, in part, upon our ability to attract and retain qualified personnel. Competition for qualified personnel in the communications industry and in our immediate geographic area is intense, and we cannot assure you that we will be successful in retaining our key employees or that we will be able to attract skilled personnel as we grow.

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#### EXECUTIVE OFFICERS

The following table sets forth certain information regarding the executive officers of Harmonic and their ages as of March 1, 1999:

NAME ----	AGE ---	POSITION -----
Anthony J. Ley.....	60	Chairman of the Board of Directors, President and Chief Executive Officer
Moshe Nazarathy.....	47	Senior Vice President, General Manager Israel R&D Center, Director
Robin N. Dickson.....	51	Chief Financial Officer
Michael Yost.....	55	Vice President, Operations
D. Colin Boyd.....	47	Vice President, Sales (North America) and Marketing
Israel Levi.....	59	Vice President, Research and Development

Anthony J. Ley has served as Harmonic's President and Chief Executive Officer since November 1988. Mr. Ley was elected Chairman of the Board of Directors in February 1995. From 1963 to 1987, Mr. Ley was employed at Schlumberger, both in Europe and the United States, holding various senior business management and research and development positions, most recently as Vice President, Research and Engineering at Fairchild Semiconductor/Schlumberger in Palo Alto, California. Mr. Ley holds an M.A. in mechanical sciences from the University of Cambridge and an S.M.E.E. from the Massachusetts Institute of Technology, is named as an inventor on 29 patents and is a Fellow of the I.E.E. (U.K.) and a senior member of the I.E.E.E.

Moshe Nazarathy, a founder of Harmonic, has served as Senior Vice President, General Manager of Israel R&D Center, since December 1993, as a director of Harmonic since Harmonic's inception and as Vice President, Research, from Harmonic's inception through December 1993. From 1985 to 1988, Dr. Nazarathy was employed in the Photonics and Instruments Laboratory of Hewlett-Packard Company, most recently serving as Principal Scientist from 1987 to 1988. From 1982 to 1984, Dr. Nazarathy held post-doctoral and adjunct professor positions at Standard University. Dr. Nazarathy holds a B.S. and a Ph.D. in electrical engineering from Technion-Israel Institute of Technology and is named as an inventor on twelve patents.

Robin N. Dickson joined Harmonic in April 1992 as Chief Financial Officer. From 1989 to March 1992, Mr. Dickson was corporate controller of Vitelic Corporation, a semiconductor manufacturer. From 1976 to 1989, Mr. Dickson held various positions at Raychem Corporation, a materials science company, including regional financial officer of the Asia-Pacific Division of the International Group. Mr. Dickson holds a Bachelor of Laws from the University of Edinburgh and is a member of the Institute of Chartered Accountants of Scotland.

Michael Yost joined Harmonic in September 1991 as Vice President, Operations. From 1983 until December 1990, Mr. Yost was employed at Vitalink Communications, a satellite communications systems manufacturer, holding various senior management positions, most recently as Vice President, Operations. Mr. Yost holds a B.S. in management from San Jose State University.

D. Colin Boyd joined Harmonic in June 1998 as Vice President, Sales (North America) and Marketing. From January 1997 to May 1998, Mr. Boyd was Vice President of International Sales Operations, Satellite Networks Division at General Instrument, a communications equipment manufacturer. Previously, Mr. Boyd was employed at Scientific-Atlanta, a communications equipment manufacturer, where he held the position of Director, Business Television and Specialty Markets from December 1994 to December 1996 and the position of Director, Domestic Product Line from November 1989 until December 1994. Mr. Boyd holds an M.Sc. in Electrical Engineering from the University of British Columbia and a B.Sc. in Electronics Engineering from Queen's University, Belfast, Northern Ireland.

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Israel Levi joined Harmonic in July 1989 and has served as Vice President, Research and Development since May 1996. Between July 1989 and May 1996, Mr. Levi held various product management and product development positions at Harmonic. From 1988 to 1989, Mr. Levi served in product development at DSC, a telecommunications systems company, and from 1984 to 1988, Mr. Levi served as Director of CATV Products Division at Catel Communications, a telecommunications equipment manufacturer. Mr. Levi holds an M.S. in Electrical Engineering from Carleton University, Ottawa, Canada and a B.S. in Electrical Engineering from Technion-Israel Institute of Technology.

## ITEM 2. PROPERTIES

Our principal operations are located at our corporate headquarters in Sunnyvale, California. The lease on our headquarters building, of approximately 110,000 square feet, expires in July 2006. We have subleased approximately

25,000 square feet of our headquarters through December 1999. We also have several sales offices in the United States, sales and support centers in Europe and Asia and two subsidiaries, New Media Communication Ltd., and a research and development facility in Israel. We believe that our existing facilities will be adequate to meet our needs for the foreseeable future.

ITEM 3. LEGAL PROCEEDINGS

There are no material pending legal proceedings to which we are a party or to which any of our properties is subject.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

None.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON STOCK AND RELATED SECURITY HOLDER MATTERS

(a) The Company's Common Stock has been quoted on the Nasdaq National Market under the symbol HLIT since the Company's initial public offering on May 22, 1995. Prior to such time, there was no public market for the Common Stock of the Company. The following table sets forth, for the periods indicated, the high and low sales prices per share of the Common Stock (adjusted to reflect a two-for-one stock split on October 14, 1999) as reported on the Nasdaq National Market:

	HIGH -----	LOW -----
1997		
First quarter.....	\$12.63	\$6.38
Second quarter.....	\$10.50	\$5.63
Third quarter.....	\$10.63	\$7.44
Fourth quarter.....	\$ 8.25	\$5.13
1998		
First quarter.....	\$ 8.13	\$5.31
Second quarter.....	\$ 9.50	\$6.06
Third quarter.....	\$ 9.00	\$3.81
Fourth quarter.....	\$ 9.44	\$4.38

(b) Holders of record: At March 1, 1999, there were approximately 111 stockholders of record of the Company's Common Stock.

(c) Dividends: The Company has never declared or paid any dividends on its capital stock. The Company currently expects to retain future earnings, if any, for the use in the operation and expansion of its business and does not anticipate paying any cash dividends in the foreseeable future. The covenants made by the Company under its existing line of credit prohibit the payment of dividends.

ITEM 6. SELECTED FINANCIAL DATA

YEAR ENDED DECEMBER 31,

	1998	1997	1996	1995	1994
--	------	------	------	------	------

(IN THOUSANDS, EXCEPT PER SHARE DATA)

CONSOLIDATED STATEMENT OF OPERATIONS DATA:

Net sales.....	\$ 83,857	\$74,442	\$60,894	\$39,180	\$ 18,224
Gross profit.....	30,555	34,605	27,731	17,851	6,467
Income (loss) from operations(1).....	(21,943)	4,506	5,204	3,761	(2,189)
Net income (loss)(1).....	(21,453)	4,929	5,918	4,121	(2,368)
Basic net income (loss) per share(2)(3).....	(0.92)	0.24	0.29	0.36	--
Diluted net income (loss) per share(2)(3).....	(0.92)	0.21	0.26	0.20	--

CONSOLIDATED BALANCE SHEET DATA:

Cash and cash equivalents.....	\$ 9,178	\$13,670	\$16,410	\$22,126	\$ 1,743
Working capital.....	32,318	38,772	34,321	32,495	6,893
Total assets.....	62,424	58,887	54,633	41,817	14,578
Long term debt, including current portion.....	577	--	--	--	1,480
Mandatorily Redeemable Convertible Preferred Stock.....	--	--	--	--	29,215
Stockholders' equity (deficit).....	43,474	49,931	43,641	37,009	(20,717)

(1) The 1998 loss from operations and net loss include a one-time charge of \$14.0 million for acquired in-process technology. See Note 2 of Notes to Consolidated Financial Statements.

(2) Net loss per share data for periods prior to the commencement of public trading of the company's Common Stock on May 22, 1995 have not been presented as such presentation is not meaningful.

(3) See Note 5 to Consolidated Financial Statements for a discussion of the shares used to compute net income (loss) per share. All per share amounts have been retroactively adjusted to reflect the two-for-one stock split made effective on October 14, 1999.

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

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

OVERVIEW

Harmonic designs, manufactures and markets digital fiber optic systems for delivering video, voice and data services over cable, satellite and wireless networks. Almost all of our sales have been derived directly or indirectly from sales of fiber optic transmission systems to cable television operators. With the introduction of our TRANsend digital headend products in 1997 and the subsequent purchase of New Media Communication Ltd., we have broadened our product offering to enable delivery of digital video, voice and data over satellite and wireless networks in addition to cable systems.

To date, a substantial majority of Harmonic's net sales have been to relatively few customers, and Harmonic expects this customer concentration to continue in the foreseeable future. In 1998, sales to TCI accounted for 17% of Harmonic's net sales and sales to a Chinese distributor accounted for 11% of Harmonic's net sales. In 1997, sales to Capella, Harmonic's Canadian distributor, accounted for 17% of Harmonic's net sales. In 1996, sales to Tratec, Harmonic's former U.K. distributor, Capella and ANTEC accounted for 15%, 15% and 13%, respectively, of Harmonic's net sales.

Sales to customers outside of the United States in 1998, 1997 and 1996 represented 43%, 59% and 57% of net sales, respectively. International sales are made primarily to distributors, which are generally responsible for importing the products and providing installation and technical support and service to customers within their territory. We expect international sales to continue to



account for a substantial portion of our net sales for the foreseeable future.

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Harmonic's net sales in the second half of 1997 and the first quarter of 1998 were negatively affected by a slow-down in spending by cable television operators in the U.S. and in foreign markets. The factors contributing to this slow-down in capital spending included:

- consolidation and system exchanges by our domestic cable customers, which generally have had the initial effect of delaying certain system upgrades;
- uncertainty related to development of digital video and cable modem industry standards;
- delays associated with the evaluation of new services and system architectures by many cable television operators;
- emphasis on marketing and customer service strategies by some international cable television operators instead of construction of networks; and
- general economic conditions in international markets.

While Harmonic's net sales increased in the last three quarters of 1998 from the level achieved in the first quarter of 1998 due to increased spending in the U.S. cable television industry, spending by international cable television operators generally remained weak. Harmonic cannot predict when international cable television spending will increase and whether U.S. cable television spending will continue to grow. In addition, cable television capital spending can be subject to the effects of seasonality, with fewer construction and upgrade projects typically occurring in winter months and otherwise being affected by inclement weather.

In 1998, 1997 and 1996, sales of optical transmitters accounted for approximately 54%, 63%, and 71%, respectively, of net sales and sales of optical node receivers, return path and network management products accounted for approximately 35%, 37%, and 29%, respectively, of net sales. In 1998, TRANsend and CyberStream digital products accounted for 11% of net sales. There were no significant sales of digital products in 1997 or 1996.

Harmonic generally recognizes revenue upon shipment of product. Harmonic does not provide for rights of return to end users or distributors. A provision for the estimated cost of warranty is recorded at the time revenue is recognized. To date, gross margins on sales of optical transmitter products have been higher than sales of receiver and return path products. In addition, sales made to customers outside of the United States have generally carried higher gross margins. In 1999, we expect our gross margins to be below 1997 levels principally due to anticipated softness in certain international markets, continued pricing pressure, our expected mix of products sold and manufacturing start-up costs associated with recent product introductions.

Harmonic often recognizes a substantial portion of its revenues in the last month of the quarter. Harmonic establishes its expenditure levels for product development and other operating expenses based on projected sales levels, and expenses are relatively fixed in the short term. Accordingly, variations in timing of sales can cause significant fluctuations in operating results. In addition, because a significant portion of Harmonic's business is derived from orders placed by a limited number of large customers, the timing of such orders can also cause significant fluctuations in our operating results. Harmonic's expenses for any given quarter are typically based on expected levels of future sales and if sales are below expectations in any given quarter, the adverse impact of the shortfall on operating results may be magnified by Harmonic's inability to adjust spending to compensate for the shortfall. As a result of these and other factors, Harmonic's 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. See "Risk Factors -- Our operating results are likely to fluctuate significantly and may fail to meet or exceed the expectations of securities analysts or investors, causing our stock price to decline."

RESULTS OF OPERATIONS

Harmonic's historical consolidated statements of operations data for each of the three years ended December 31, 1996, 1997 and 1998 as a percentage of net sales, are as follows:

	FISCAL YEAR ENDED DECEMBER 31,		
	1998	1997	1996
	----	----	----
Net sales.....	100%	100%	100%
Cost of sales.....	64	54	54
	---	---	---
Gross profit.....	36	46	46
Operating expenses			
Research and development.....	16	16	15
Sales and marketing.....	21	18	16
General and administrative.....	8	6	6
Acquired in-process technology.....	17	--	--
	---	---	---
Total operating expenses.....	62	40	37
	---	---	---
Income (loss) from operations.....	(26)	6	9
Interest and other income, net.....	--	1	1
	---	---	---
Income (loss) before income taxes.....	(26)	7	10
Provision for income taxes.....	--	--	--
	---	---	---
Net income (loss).....	(26)%	7%	10%
	===	===	===

Net Sales

Harmonic's net sales increased by 13% to \$83.9 million in 1998 as compared to \$74.4 million in 1997. This growth in net sales was primarily attributable to the sale of new products, including TRANsend digital headend products, METROLink DWDM systems and PWRBlazer Scaleable Nodes, which began volume shipment during the middle of 1998, as well as to an increase in spending by our domestic customers in the second half of 1998. During 1998 domestic sales increased by 55%, principally due to increased shipments to TCI, while international sales decreased by 17% due to continued weakness in many international markets. While the increase in net sales was also due to nominally higher unit sales of existing products, generally lower selling prices in the industry resulted in an approximate ten percent decrease in existing product sales. Net sales increased by 22% to \$74.4 million in 1997 from \$60.9 million in 1996. This growth in net sales in 1997 was primarily attributable to higher unit sales of Harmonic's receiver and return path products and sales of the 1550nm MAXLink transmission system, which began shipment during the second quarter of 1996. These factors were partially offset by lower unit sales of YAGLink transmitters due in part to the increasing acceptance of 1550nm transmitters among cable operators for broadcast transmission.

## Gross Profit

Gross profit decreased to \$30.6 million (36% of net sales) in 1998 from \$34.6 million (46% of net sales) in 1997. The decreases in gross profit and gross margins were principally due to a lower percentage of international sales resulting from reduced demand, a less favorable product mix which included a lower percentage of transmitters, and pricing pressure for certain products due to increased competition. In addition, gross profit and gross margins were negatively impacted by start-up costs associated with new product introductions and an increase of \$1.2 million in inventory reserves for existing products following the introduction of new products. Harmonic expects gross margins to continue to be below 1997 levels in 1999 due to anticipated softness in certain international markets, expected changes in product mix, pricing pressure for certain products and manufacturing start-up costs associated with recent product introductions. Gross profit increased to \$34.6 million (46% of net sales) in 1997 from \$27.7 million (46% of net sales) in 1996. The increase in gross profit was principally due to higher unit sales volume and lower manufacturing costs, particularly for Harmonic's MAXLink products, which commenced shipment during the second quarter of

1996, and improved margins on return path products resulting from product design changes. These factors were partially offset by a less favorable product mix which included lower sales of transmitters as a percentage of net sales, and lower selling prices for certain products.

## Research and Development

Research and development expenses increased to \$13.5 million (16% of net sales) in 1998 from \$11.7 million (16% of net sales) in 1997. The increase in research and development expenses in 1998 was primarily due to increased headcount, particularly at Harmonic's subsidiary in Caesarea, Israel which is continuing to develop Harmonic's TRANsend digital headend products, and to the inclusion of NMC's research and development expenses starting in January 1998. Research and development expenses increased to \$11.7 million (16% of net sales) in 1997 from \$9.2 million (15% of net sales) in 1996. The increase in research and development expenses in 1997 both in absolute dollars and as a percentage of net sales was principally attributable to increased headcount and higher prototype material costs in connection with the node and digital development programs. Research and development expenses for 1998, 1997 and 1996 are net of grants of approximately \$346,000, \$120,000 and \$140,000, respectively. Harmonic anticipates that research and development expenses will continue to increase in absolute dollars, although they may vary as a percentage of net sales.

## Sales and Marketing

Sales and marketing expenses increased to \$18.2 million (21% of net sales) in 1998 from \$13.6 million (18% of net sales) in 1997. The increase in sales and marketing expenses in 1998 both in absolute dollars and as a percentage of net sales was primarily due to higher headcount and costs associated with expansion and reorganization of the direct sales force, technical support and marketing organizations, particularly to support the introduction of our new products. This increase was due to expenses incurred in connection with the recruiting and staffing for new international sales and technical support centers. In addition, higher promotional expenses and the inclusion of NMC's sales and marketing expenses starting in January 1998 contributed to the increase. Sales and marketing expenses increased to \$13.6 million (18% of net sales) in 1997 from \$9.8 million (16% of net sales) in 1996. The increase in sales and marketing expenses in 1997 was primarily due to higher headcount associated with expansion of the direct sales force, customer service and technical support organizations, expenses associated with establishing international sales offices, and higher

promotional expenses. Harmonic expects that sales and marketing expenses will continue to increase in absolute dollars, although they may vary as a percentage of net sales.

#### General and Administrative

General and administrative expenses increased to \$6.8 million (8% of net sales) in 1998 from \$4.8 million (6% of net sales) in 1997. The increase in general and administrative expenses in 1998 was primarily due to the inclusion of NMC's expenses starting in January 1998, as well as costs of supporting Harmonic's growth in overall headcount, and the establishment of international sales and support offices. General and administrative expenses increased to \$4.8 million (6% of net sales) in 1997 from \$3.5 million (6% of net sales) in 1996. The increase in absolute expenses in 1997 was principally attributable to costs of supporting Harmonic's growth in overall headcount and operations and providing for a higher accounts receivable reserve. Harmonic expects to incur higher levels of general and administrative expenses in the future, although such expenses may vary as a percentage of net sales.

#### Acquired In-Process Technology

On January 5, 1998, Harmonic acquired NMC, a privately-held Israeli development stage company with 15 employees, for \$17.6 million in a stock-for-stock transaction. Harmonic also assumed all outstanding stock options of NMC. The transaction was accounted for as a purchase and, accordingly, the fair value of the assets and liabilities were recorded based upon their fair value at the time of the transaction. Harmonic determined, with the aid of an independent appraisal, that technological feasibility of the acquired in-process technology had not yet been established. Harmonic also believed that NMC's existing technology would generate no

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further revenue on account of its obsolescence. Accordingly, no value was assigned to the existing technology. In accordance with generally accepted accounting principles, Harmonic wrote off acquired in-process research and development expenses of \$14.0 million as a one-time charge to operations in the first quarter of 1998.

Historically, NMC had developed receiver cards for data transmission over cable, wireless and satellite networks. These analog products operated at transmission speeds of 5.5Mbps and had been sold only to a limited number of customers. NMC concluded during 1997 that these analog products were rapidly becoming obsolete and discontinued research and development efforts. Based on customer feedback and expected market trends, NMC commenced technology development of the CyberStream System, a digital system designed to provide substantially increased transmission speeds of 48Mbps to 52Mbps and to incorporate differentiated service capabilities and sophisticated network management.

At the time of the NMC acquisition, the CyberStream System was NMC's only research and development project in process. The CyberStream System was comprised of a data gateway at the satellite uplink or cable headend, network management and control features at the headend, and a receiver card for installation in a personal computer or a local area network router device. Just prior to the acquisition, NMC had initiated production of a limited number of prototype receiver cards in order to participate in pilot trials with two prospective customers. Shipment of the prototype cards commenced at the end of 1997.

Harmonic determined that since these products were intended for deployment in networks with large numbers of subscribers, NMC would have to engage in ongoing trials over an extended period to determine the products' technological feasibility. As part of these trials, NMC also shipped initial versions of

operating software, but was several months away from completion of critical elements of the CyberStream System, such as quality of service, simple network management protocol and porting of the software to the Windows 98 and NT platforms. Subsequent to the acquisition, Harmonic expended \$1.9 million in 1998 in research and development costs to accelerate development and to incorporate changes resulting from field trial evaluations.

To estimate the value of NMC's existing and in-process technology, the total income forecasted was allocated to existing, in-process and future technology based on the products' scheduled release dates and expected lives. No value was ascribed to existing technology due to its obsolescence nor to future technology that was not in development at the date of acquisition. The forecasts assumed timely release of the products as anticipated by Harmonic and that NMC would utilize Harmonic distribution channels. Estimated revenues for the purchased in-process products were assumed to commence by the middle of fiscal year 1998 and increase through fiscal year 2002, at which time they were assumed to decrease through fiscal year 2007, as newer products would be released.

Rapid change and improvements in technology characterize the high-speed data delivery market. Harmonic's future success will depend on its ability to achieve scientific and technological advances and to translate such advances into commercially competitive products on a timely basis that keep pace with competing technological developments and address the increasingly sophisticated needs of our customers.

#### Interest and Other Income, Net

Interest and other income, net, consisting principally of interest income, was \$0.5 million in 1998, \$0.7 million in 1997 and \$1.0 million in 1996. The decreases in 1998 and 1997 were due primarily to lower interest income on lower average cash and cash equivalents balances.

#### Income Taxes

No provision for income taxes was recorded for 1998 due to the net loss incurred. The provision for income taxes for 1997 and 1996 was based on an estimated annual tax rate of 5% resulting from federal and state alternative minimum taxes and utilization of net operating loss carryforwards. Harmonic had available federal net operating loss carryforwards of approximately \$2.0 million at December 31, 1998. Under current tax law, Harmonic's utilization of its net operating loss carryforwards and tax credits may be limited in certain circumstances resulting from a change in ownership. In 1999, Harmonic expects to have an effective annual tax rate substantially lower than statutory rates, approximating 20% to 25%, due to the utilization of net

operating loss carryforwards and tax credit carryforwards. Beyond 1999, Harmonic expects to have an effective annual tax rate that approximates statutory rates.

#### LIQUIDITY AND CAPITAL RESOURCES

Harmonic completed its initial public offering in May 1995, raising approximately \$24.2 million, net of offering costs. Prior to that, Harmonic satisfied its liquidity needs primarily from the net proceeds of private sales of preferred stock, and to a lesser extent, from capital equipment leases and bank borrowings.

Cash used in operations was \$2.0 million in 1998 compared to cash provided by operations of \$2.0 million in 1997 and \$0.3 million in 1996. The increase in cash used in operations in 1998 compared to 1997 was primarily due to the net loss and higher inventory levels, partially offset by improved customer collections and higher accounts payable and accrued liabilities. The increase in

cash provided by operations in 1997 compared to 1996 was principally attributable to slower growth in receivables, inventory and prepaid expenses and other assets, partially offset by lower net income, accounts payable and accrued liabilities.

Net working capital was \$32.3 million at December 31, 1998, including \$9.2 million of cash and cash equivalents. During 1998, Harmonic had a bank line of credit and equipment term loan facilities which provided up to \$12.0 million and \$3.0 million in borrowings, respectively. There were no outstanding borrowings under the bank line at December 31, 1998, although Harmonic had guaranteed certain borrowing facilities of its subsidiaries totaling \$0.9 million with letters of credit and had total letters of credit issued under the line of \$2.7 million, which expire at various dates throughout fiscal year 1999. As of December 31, 1998, borrowings of \$577,000 were outstanding under the term loan. These facilities were available until December 1998. During the fourth quarter of 1998, Harmonic agreed to the principal terms of an amended and restated bank line of credit facility, which was finalized in March 1999. The new facility provides for borrowings of up to \$10.0 million with a \$3.0 million equipment term loan sub-limit. This new line, which expires in March 2000, bears interest at the bank's prime rate plus 0.5% (prime rate plus 1.0% under the term loan sub-limit). The line is secured by substantially all of the assets of Harmonic.

Additions to property, plant and equipment were approximately \$4.4 million during 1998 compared to \$4.8 million in 1997 and \$6.7 million in 1996 respectively. While Harmonic currently has no material commitments, it expects to spend approximately \$5.0 million on capital expenditures in 1999, primarily for manufacturing and test equipment.

Harmonic believes that its existing liquidity sources, including its new bank line of credit facility, and anticipated funds from operations will satisfy its cash requirements for at least the next twelve months.

#### YEAR 2000 READINESS DISCLOSURE

Many currently installed computer systems and software products are coded to accept only two digit entries in the date code field. These date code fields will need to accept four digit entries to distinguish twenty-first century dates from twentieth century dates. As a result, many companies' software and computer systems may need to be upgraded or replaced in order to comply with such "Year 2000" or "Y2K" requirements.

Harmonic has established a corporate-wide program to address the Y2K issue. This program encompasses product, internal systems and supplier and business partner compliance. The project is comprised of identification of risks, assessment of risks, development of remediation or contingency plans and implementation and testing.

Based upon the assessments to date, all hardware products currently under development or released, and all software products currently under development are Y2K compliant. Certain software products currently installed at customer sites are not Y2K compliant and Harmonic is working with its customers to provide migration paths for each product. Harmonic's significant internal systems have been purchased from outside vendors and are Y2K compliant. Harmonic is in the process of upgrading internal systems that are not currently Y2K compliant, and expects to have this process completed by mid-1999. To date, Y2K costs have not been material to Harmonic and Harmonic does not expect that its Y2K costs will exceed \$100,000 in the future. Harmonic currently does not have a contingency plan to address Y2K issues related to its products and

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internal systems, but will develop a contingency plan by mid-1999 if its products and internal systems are not yet Y2K compliant. In addition, Harmonic is working with its suppliers and business partners to identify at what stage they are in the process of identifying and addressing the Y2K issue and to assess the resulting risks and develop appropriate contingency plans. Harmonic will continue to perform compliance reviews and tests to ensure compliance on an

ongoing basis. Harmonic currently does not anticipate that the cost of its Y2K program will be material to its financial condition and results of operations.

Although Harmonic has established and commenced its program to address Y2K issues, the failure of Harmonic products to operate properly with regard to the Y2K requirements could (a) cause Harmonic to incur unanticipated expenses to remedy any problems, (b) cause a reduction in sales and (c) expose Harmonic to related litigation by its customers, each of which could harm our business, operating results and financial condition. In addition, Harmonic and third parties with whom it conducts business may utilize equipment or software that may not be Y2K compliant. Failure of Harmonic's or any such third party's equipment or software to operate properly with regard to the Y2K requirements could cause, among other things, Harmonic or any such third party to incur unanticipated expenses or efforts to remedy any problems, which could have a material adverse effect on its or their respective business, operating results and financial condition. Furthermore, the purchasing patterns of customers or potential customers may be affected by Y2K issues as companies expend significant resources to evaluate and to correct their equipment or software for Y2K compliance and as they simultaneously evaluate the preparedness of the third parties with whom they deal. These expenditures may result in reduced funds available to purchase products and services such as those offered by Harmonic, which could have a material adverse effect on Harmonic business, operating results and financial condition.

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#### FACTORS THAT MAY EFFECT FUTURE RESULTS OF OPERATIONS

Our Operating Results Are Likely To Fluctuate Significantly And 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 of capital spending of our customers, both in the U.S. and in foreign markets;
- changes in market demand;
- the timing and amount of customer orders;
- competitive market conditions;
- our unpredictable sales cycles;
- new product introductions by our competitors or by us;
- changes in domestic and international regulatory environments;
- market acceptance of new or existing products;
- the cost and availability of components, subassemblies and modules;
- the mix of our customer base and sales channels;
- the mix of our products sold;
- our development of custom products;
- the level of international sales; and
- economic conditions specific to the cable television industry and general economic conditions.

In addition, we often recognize a substantial portion of our revenues in the last month of the quarter. We establish our expenditure levels for product development and other operating expenses based on projected sales levels, and expenses are relatively fixed in the short term. Accordingly, variations in timing of sales can cause significant fluctuations in operating results. In addition, because a significant portion of our business is derived from orders placed by a limited number of large customers, the timing of such orders can also cause significant fluctuations in our operating results. Our expenses for any given quarter are typically based on expected sales and if sales are below expectations in any given quarter, the adverse impact of the shortfall on our operating results may be magnified by our inability to adjust spending to compensate for the shortfall. As a result of all these 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 Depend on Cable Industry Capital Spending for Substantially All of Our Revenue.

Almost all of our sales have been derived, directly or indirectly, from sales to cable television operators and we expect these sales to constitute a substantial majority for the foreseeable future. Demand for our products depends to a significant extent upon the magnitude and timing of capital spending by cable television operators for constructing, rebuilding or upgrading their systems. The capital spending patterns of cable television operators are dependent on a variety of factors, including:

- access to financing;
- cable television operators' annual budget cycles;
- the status of federal, local and foreign government regulation of telecommunications and television broadcasting;

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- overall demand for cable television services and the acceptance of new broadband services;
- competitive pressures (including the availability of alternative video delivery technologies such as satellite broadcasting); and
- discretionary customer spending patterns and general economic conditions.

Our net sales in the second half of 1997 and the first quarter of 1998 were negatively affected by a slow-down in spending by cable television operators in the U.S. and in foreign markets. The factors contributing to this slow-down in capital spending included:

- consolidation and system exchanges by our domestic cable customers, which generally have had the initial effect of delaying certain system upgrades;
- uncertainty related to development of digital video and cable modem industry standards;
- delays associated with the evaluation of new services and system architectures by many cable television operators;
- emphasis on marketing and customer service strategies by some international cable television operators instead of construction of networks; and
- general economic conditions in international markets.



While our net sales increased in the last three quarters of 1998 from the level achieved in the first quarter of 1998 due to increased spending in the U.S. cable television industry, spending by international cable television operators generally remained weak. We cannot predict when international cable television spending will increase and whether U.S. cable television spending will continue to grow. In addition, cable television capital spending can be subject to the effects of seasonality, with fewer construction and upgrade projects typically occurring in winter months and otherwise being affected by inclement weather.

Our Customer Base is Concentrated and the Loss of One or More of Our Key Customers Would Harm Our Business.

Historically, a significant majority of our sales have been to relatively few customers. Sales to our ten largest customers in 1996, 1997 and 1998 accounted for approximately 72%, 56% and 66%, respectively, of net sales. Due in part to the consolidation of ownership of domestic cable television systems, we expect that sales to relatively few customers will continue to account for a significant percentage of our net sales for the foreseeable future. For example, in 1998, sales to Tele-Communications, Inc., or TCI, which was recently acquired by AT&T, represented approximately 17% of our net sales and sales to a Chinese distributor represented approximately 11%. Almost all of our sales are made on a purchase order basis, and none of our customers has entered into a long-term agreement requiring it to purchase our products. The loss of, or any reduction in orders from, a significant customer would harm our business.

We Depend On Our International Sales and are Subject to the Risks Associated With International Operations.

Sales to customers outside of the United States in 1996, 1997 and 1998 represented 57%, 59% and 43% of net sales, respectively, and we expect that international sales will continue to represent a substantial portion of our net sales for the foreseeable future. Our international operations are subject to a number of risks, including:

- changes in foreign government regulations and telecommunications standards;
- import and export license requirements, tariffs, taxes and other trade barriers;
- fluctuations in currency exchange rates;
- difficulty in collecting accounts receivable;
- the burden of complying with a wide variety of foreign laws, treaties and technical standards;

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- difficulty in staffing and managing foreign operations; and
- political and economic instability.

While our international sales are typically denominated in U.S. dollars, fluctuations in currency exchange rates could cause our products to become relatively more expensive to customers in a particular country, leading to a reduction in sales or profitability in that country. We do not currently engage in any foreign currency hedging transactions. 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 operating results. Furthermore, payment cycles for international customers are typically longer than those for customers in the United States. Unpredictable sales cycles could cause us to fail to meet or exceed the expectations of security analysts and investors for any given period. Further, we cannot assure you that foreign markets will continue to develop.

In recent periods, certain Asian and Latin American currencies have devalued significantly in relation to the U.S. dollar. We believe that financial developments in Asia and Latin America were a major factor contributing to lower international net sales in fiscal 1998 as compared to fiscal 1997. In addition, the uncertain financial situation in Asia has placed financial pressure on some of our distributors. In response, we increased accounts receivable reserves in the first quarter of 1998. We are continuing to evaluate the effect on our business of recent financial developments in Asia and Latin America. Given the current political and economic uncertainties in China and throughout Asia, we cannot assure you that shipment of orders to Asia, including China, will be made as scheduled, or at all. We cannot assure you that our sales and collection cycles in Asia and Latin America will not continue to be harmed by the uncertain financial climate. See "Management's Discussion and Analysis of Financial Condition and Results of Operations."

We Must be Able to Manage Expenses and Inventory Risks Associated With Meeting the Demand of Our Customers.

From time to time, we receive indications from our customers as to their future plans and requirements to ensure that we will be prepared to meet their demand for our products. In the past, however, we have received such indications but, on occasion, we did not ultimately receive purchase orders for our products. We must be able to effectively manage expenses and inventory risks associated with meeting potential demand for our products. In addition, if we fail to meet customers' supply expectations, we may lose business from such customers. If we expend resources and purchase materials to manufacture products and such products are not purchased, our business and operating results could suffer.

The Market in Which We Operate is Intensely Competitive and Many of Our Competitors are Larger and More Established.

The market for cable television transmission equipment is extremely competitive and has been characterized by rapid technological change. Harmonic's current competitors include significantly larger corporations such as ADC Telecommunications, ANTEC (a company owned in part by TCI), General Instrument, Philips and Scientific-Atlanta. Additional competition could come from new entrants in the broadband communications equipment market, such as Lucent Technologies. Most of these companies are substantially larger and have greater financial, technical, marketing and other resources than we do. Many of these large organizations are in a better position to withstand any significant reduction in capital spending by cable television operators. In addition, many of our competitors have more long standing and established relationships with domestic and foreign cable television operators than we do. We cannot assure you that we will be able to compete successfully in the future or that competition will not harm our business.

If any of our competitors' products or technologies were to become the industry standard or if any of our smaller competitors were to enter into or expand relationships with larger companies through mergers, acquisitions or otherwise, our business could be seriously harmed. Further, our competitors may bundle their products or incorporate functionality into existing products in a manner that discourages users from purchasing our products. See "Business -- Competition."

Broadband Communications Markets are Relatively Immature and Characterized by Rapid Technological Change.

Broadband communications markets are relatively immature, making it difficult to accurately predict the markets' future growth rate, size and technological direction. In view of the evolving nature of these markets, it is possible that cable television operators, telephone companies or other suppliers of broadband wireless and satellite services will decide to adopt alternative architectures or technologies that are incompatible with our current or future

products. If we are unable to design, develop, manufacture and sell products that incorporate or are compatible with these new architectures or technologies, our business will suffer.

We Need to Develop and Introduce New and Enhanced Products In a Timely Manner to Remain Competitive.

Broadband communications markets are characterized by continuing technological advancement, changes in customer requirements and evolving industry standards. To compete successfully, we must design, develop, manufacture and sell new or enhanced products that provide increasingly higher levels of performance and reliability. However, we may not be able to successfully develop or introduce these products. Moreover, these products may not achieve broad commercial acceptance and may have lower gross margins than our other products.

In addition, to successfully develop and market our planned products for digital applications, we may be required to enter into technology development or licensing agreements with third parties. We cannot assure you that we will be able to enter into any necessary technology development or licensing agreement on terms acceptable to us, 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, accordingly, could materially and adversely affect our business and operating results.

We Need to Effectively Manage Our Growth.

The growth in Harmonic's business has placed, and is expected to continue to place, a significant strain on Harmonic's personnel, management and other resources. Harmonic's ability to manage any future growth effectively will require us to attract, train, motivate and manage new employees successfully, to integrate new employees into our overall operations, to retain key employees and to continue to improve our operational, financial and management systems. If we fail to manage our future growth effectively, our business could suffer.

Competition for Qualified Personnel is Intense, and We May Not Be Successful in Attracting and Retaining 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 are dependent on our ability to retain and motivate high caliber personnel, in addition to attracting new personnel. Competition for qualified technical and other personnel is intense, particularly in the San Francisco Bay Area and Israel, and we may not be successful in attracting and retaining such personnel.

Competitors and others have in the past and may in the future attempt to recruit our employees. While our employees are required to sign standard agreements concerning confidentiality and ownership of inventions, we generally do not have employment contracts or noncompetition agreements with any of our personnel. The loss of the services of any of our key personnel, the inability to attract or retain qualified personnel in the future or delays in hiring required personnel, particularly engineers and other technical personnel, could negatively affect our business.

Our Acquisition of NMC Has Created Numerous Risks and Challenges for Us.

The acquisition of New Media Communication Ltd., or NMC, has placed, and is expected to continue to place, a significant strain on our personnel, management and other resources. The acquisition of NMC in January 1998 has allowed us to develop and expand our product offerings to include broadband high-speed data delivery hardware and software and increased the scope of our international operations in Israel. The acquisition of NMC continues to impose challenges, including:

- the dependence on the evolution and growth of the market for wireless and satellite broadband services;
- difficulties in the assimilation of operations, research and development efforts, products, personnel and cultures of Harmonic and NMC;
- our ability to successfully develop, manufacture and gain market acceptance of the products of NMC; and
- the amortization of goodwill resulting from the acquisition of NMC.

We cannot assure you that we will be able to successfully address these challenges, and our failure to do so could materially and adversely affect our business, financial condition and operating results.

#### We May be Subject to Risks Associated with Acquisitions.

We have made and may make investments in complementary companies, products or technologies. If we make acquisitions, we could have difficulty assimilating or retaining the acquired companies' personnel and operations or integrating the acquired technology or products into ours. These difficulties could disrupt our ongoing business, distract our management and employees and increase our expenses. Moreover, our profitability may suffer because of acquisition-related costs or amortization costs for acquired goodwill and other intangible assets. Furthermore, we may have to incur debt or issue equity securities to pay for any future acquisitions, the issuance of which could be dilutive to our existing shareholders. If we are unable to successfully address any of these risks, our business, financial condition and operating results could be harmed.

If Sales Forecasted For A Particular Period Are Not Realized In That Period Due To The Unpredictable Sales Cycles Of Our Products, Our Operating Results For That Period Will Be Harmed.

The sales cycles of many of our products, particularly our newer products and products sold internationally, are typically unpredictable and usually involve:

- a significant technical evaluation;
- a commitment of capital and other resources by cable and other network operators;
- delays associated with cable and other network operators' internal procedures to approve large capital expenditures;
- time required to engineer the deployment of new technologies or services within broadband networks; and
- testing and acceptance of new technologies that affect key operations.

For these and other reasons, our sales cycles generally last three to six months, but can last up to 12 months. If orders forecasted for a specific customer for a particular quarter do not occur in that quarter, our operating results for that quarter could be substantially lower than anticipated.

Our Failure to Adequately Protect Our Proprietary Rights May Adversely Affect Us.

We currently hold 12 issued United States patents and 9 issued foreign patents, and have a number of patent applications pending. Although we attempt to protect our intellectual property rights through patents, trademarks, copyrights, maintaining certain technology as trade secrets and other measures, we cannot assure you that any patent, trademark, copyright or other intellectual property right owned by us will not be

invalidated, circumvented or challenged, that such intellectual property right 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 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 certain foreign countries in which we do business or may do business in the future.

We believe that the future success of our business will depend on our ability to translate the technological expertise and innovation of our personnel into new and enhanced products. We generally 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. Nevertheless, we cannot assure you 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 resources and could harm our business and operating results.

In order to successfully develop and market our planned products for digital applications, 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 will be negotiated on terms acceptable to us, 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 cause our business to suffer.

As is common in our industry, we have from time to time received notification from other companies of intellectual property rights held by those companies upon which our products may infringe. Any claim or litigation, with or without merit, could be costly, time consuming and could result in a diversion of management's attention, which could harm our business. If we were found to be infringing on the intellectual property rights of any third party, we could be subject to liabilities for such infringement, which could be material, and could be required to seek licenses from other companies or to refrain from using, manufacturing or selling certain products or using certain processes. Although holders of patents and other intellectual property rights often offer licenses to their patent or other intellectual property rights, we cannot assure you that licenses would be offered, that the terms of any offered license would be acceptable to us or that failure to obtain a license would not cause our operating results to suffer.

**We May Need Additional Capital in the Future and May Not be Able to Secure Adequate Funds in Terms Acceptable to Us.**

We currently anticipate that our existing cash balances and available line of credit and cash flow expected to be generated from future operations will be sufficient to meet our liquidity needs for at least the next twelve months. However, we may need to raise additional funds if our estimates change or prove inaccurate or in order for us to respond to unforeseen technological or marketing hurdles or to take advantage of unanticipated opportunities.

In addition, we expect to review potential acquisitions that would complement our existing product offerings or enhance our technical capabilities. While we have no current agreements or negotiations underway with respect to any potential acquisition, any future transaction of this nature could require potentially significant amounts of capital. Funds may not be available at the time or times needed, or available on terms acceptable to us. If adequate funds are not available, or are not available on acceptable terms, we may not be able to take advantage of market opportunities, to develop new products or to otherwise respond to competitive pressures.

We Purchase Several Key Components, Subassemblies and Modules Used in the Manufacture or Integration of Our Products from Sole or Limited Sources, and We are Increasingly Dependent on 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. Our reliance on sole or limited suppliers, particularly foreign suppliers, and our increasing reliance on subcontractors involves several risks, including a potential inability to obtain an adequate supply of required components, subassemblies or modules and reduced control over pricing, quality and timely delivery of components, subassemblies or modules. Certain key elements of our digital headend products are provided by a sole foreign supplier. We do not generally maintain long-term agreements with any of our suppliers or subcontractors. An inability to obtain adequate deliveries or any other circumstance that would require us to seek alternative sources of supply could affect our ability to ship our products on a timely basis, which could damage relationships with current and prospective customers and harm our business. We attempt to limit this risk by maintaining safety stocks of these components, subassemblies and modules. As a result of this investment in inventories, we may be subject to an increasing risk of inventory obsolescence in the future, which could harm our business. See "Business -- Manufacturing and Suppliers."

We Face Risks Associated with Having Important Facilities and Resources Located in Israel.

Harmonic maintains two facilities in the State of Israel with a total of approximately 60 employees. The personnel at these facilities represent a significant portion of our research and development operations. Accordingly, we are directly influenced by the political, economic and military conditions affecting Israel, and any major hostilities involving Israel or the interruption or curtailment of trade between Israel and its present trading partners could significantly harm our business.

In addition, most of our employees in Israel are currently obligated to perform annual reserve duty in the Israel Defense Forces and are subject to being called for active military duty at any time. We cannot predict the effect of these obligations on Harmonic in the future.

Our Business Could be Adversely Impacted by Year 2000 Compliance Issues.

During the next year, many software programs may not recognize calendar dates beginning in the year 2000. This problem could force computers or machines which utilize date dependent software to either shut down or provide incorrect information. To address this problem, we have examined our computer and information systems, contacted our software and hardware providers, and, where necessary, made upgrades to our systems.

Based upon the assessments to date, all hardware products currently under development or released, and all software products currently under development are Y2K compliant. Certain software products currently installed at customer sites are not Y2K compliant and Harmonic is working with its customers to provide migration paths for each product. Undetected errors or defects may remain. Disruptions to our business or unexpected costs may arise because of undetected errors or defects in the technology used in our products, manufacturing processes or internal information systems, which are comprised predominantly of third party software and hardware. If we, or any of our key suppliers or customers, fail to mitigate internal and external Year 2000 risks, we may temporarily be unable to process transactions, manufacture products, send invoices or engage in similar normal business activities or we may experience a decline in sales, which could materially and adversely affect our business, financial condition and results of operations. See "Management's Discussion and Analysis of Financial Condition and Results of Operations -- Year 2000 Readiness Disclosure."

Our Stock Price May Be Volatile.

The market price of our common stock has fluctuated in the past and is likely to fluctuate in the future. In addition, the securities markets have experienced significant price and volume fluctuations and the market prices of the securities of technology companies have been especially volatile. Investors may be unable to resell their shares of our common stock at or above the offering price. In the past, companies that have experienced

volatility in the market price of their stock have been the object of securities class action litigation. If we were the object of securities class action litigation, it could result in substantial costs and a diversion of management's attention and resources. See "Market for the Registrant's Common Stock and Related Security Holder Matters."

Our Certificate of Incorporation and Bylaws and Delaware Law Contain Provisions that Could Discourage a Takeover.

Provisions of our Amended and Restated Certificate of Incorporation, Bylaws, and Delaware law could make it more difficult for a third party to acquire us, even if doing so would be beneficial to our stockholders.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk represents the risk of loss that may impact the financial position, results of operations or cash flows of Harmonic due to adverse changes in market prices and rates. Harmonic is exposed to market risk because of changes in foreign currency exchange rates as measured against the U.S. Dollar and currencies of Harmonic's subsidiaries in Israel and in the United Kingdom. Harmonic has not engaged in hedging activities as of December 31, 1998 and does not expect to do so in the foreseeable future.

Harmonic has subsidiaries in Israel and the United Kingdom whose sales are generally denominated in U.S. dollars. While Harmonic does not anticipate that near-term changes in exchange rates will have a material impact on future operating results, fair values or cash flows, Harmonic cannot assure you that a sudden and significant change in the value of the Israeli Shekel or British Pound would not harm Harmonic's financial condition and results of operations.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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(b) Financial Statement Schedules: All 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 notes thereto.

(c) Selected Quarterly Financial Data: The following table sets forth for the period indicated selected quarterly financial data for the Company.

FISCAL YEARS BY QUARTER (UNAUDITED, IN THOUSANDS, EXCEPT PER SHARE DATA)

QUARTERLY DATA:	1998				1997			
	4TH	3RD	2ND	1ST	4TH	3RD	2ND	1ST
Net sales.....	\$27,097	\$22,382	\$18,174	\$16,204	\$17,350	\$17,545	\$20,514	\$19,033
Gross profit.....	10,369	8,434	6,662	5,090	7,979	7,899	9,736	8,991
Income (loss) from operations(1).....	583	(1,044)	(2,929)	(18,553)	(97)	360	2,016	2,227
Net income (loss)(1).....	628	(831)	(2,885)	(18,365)	580	413	1,838	2,098
Basic net income (loss) per share(2).....	0.03	(0.04)	(0.12)	(0.80)	0.03	0.02	0.09	0.10
Diluted net income (loss) per share(2).....	0.02	(0.04)	(0.12)	(0.80)	0.03	0.02	0.08	0.09

(1) The loss from operations and net loss for the first quarter of 1998 includes a one-time charge of \$14.0 million for acquired in-process technology. See Note 2 of Notes to Consolidated Financial Statements.

(2) See Note 5 of Notes to Consolidated Financial Statements for a discussion of the shares used to compute net income (loss) per share. All per share amounts have been retroactively adjusted to reflect the two-for-one stock split made effective on October 14, 1999.

ITEM 9. CHANGES IN AND DISAGREEMENTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

Not applicable.

REPORT OF INDEPENDENT ACCOUNTANTS

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and stockholders' equity and of cash flows present fairly, in all material respects, the financial position of Harmonic Inc. and its subsidiaries at December 31, 1998 and 1997, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1998 in conformity with generally accepted accounting principles. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.

/s/ PRICEWATERHOUSECOOPERS LLP

PRICEWATERHOUSECOOPERS LLP



San Jose, CA  
 January 20, 1999, except as to  
 Note 14, which is as of March 15, 1999  
 and Note 5, which is as

of October 14, 1999

CONSOLIDATED BALANCE SHEETS

	DECEMBER 31,	
	----- 1998	1997 -----
	(IN THOUSANDS, EXCEPT SHARE DATA)	
ASSETS		
Current assets:		
Cash and cash equivalents.....	\$ 9,178	\$13,670
Accounts receivable, net.....	17,646	16,458
Inventories.....	22,385	15,474
Prepaid expenses and other assets.....	1,175	1,774
	-----	-----
Total current assets.....	50,384	47,376
Notes receivable.....	--	1,300
Property and equipment, net.....	10,726	10,077
Intangibles and other assets.....	1,314	134
	-----	-----
	\$ 62,424	\$58,887
	=====	=====
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable.....	\$ 7,534	\$ 3,708
Accrued liabilities.....	10,355	4,896
Current portion of long-term debt.....	177	--
	-----	-----
Total current liabilities.....	18,066	8,604
Long-term debt, less current portion.....	400	--
Other non-current liabilities.....	484	352
Commitments and Contingencies (Notes 11 and 13)		
Stockholders' equity:		
Preferred Stock, \$.001 par value, 5,000,000 shares authorized; no shares issued or outstanding.....	--	--
Common Stock, \$.001 par value, 50,000,000 shares authorized; 23,451,688 and 20,828,594 shares issued and outstanding.....	23	21
Capital in excess of par value.....	70,913	55,906
Accumulated deficit.....	(27,472)	(6,019)
Accumulated other comprehensive income.....	10	23
	-----	-----
Total stockholders' equity.....	43,474	49,931
	-----	-----
	\$ 62,424	\$58,887
	=====	=====

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

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CONSOLIDATED STATEMENT OF OPERATIONS

	YEAR ENDED DECEMBER 31,		
	1998	1997	1996
	(IN THOUSANDS, EXCEPT PER SHARE DATA)		
Net sales.....	\$ 83,857	\$74,442	\$60,894
Cost of sales.....	53,302	39,837	33,163
Gross profit.....	30,555	34,605	27,731
Operating expenses:			
Research and development.....	13,524	11,676	9,237
Sales and marketing.....	18,162	13,599	9,827
General and administrative.....	6,812	4,824	3,463
Acquired in-process technology.....	14,000	--	--
Total operating expenses.....	52,498	30,099	22,527
Income (loss) from operations.....	(21,943)	4,506	5,204
Interest and other income, net.....	490	682	1,025
Income (loss) before income taxes.....	(21,453)	5,188	6,229
Provision for income taxes.....	--	259	311
Net income (loss).....	\$ (21,453)	\$ 4,929	\$ 5,918
Net income (loss) per share:			
Basic.....	\$ (0.92)	\$ 0.24	\$ 0.29
Diluted.....	\$ (0.92)	\$ 0.21	\$ 0.26
Weighted average shares:			
Basic.....	23,244	20,690	20,211
Diluted.....	23,244	23,046	22,948

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

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CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY

	COMMON STOCK		CAPITAL IN EXCESS OF PAR VALUE	ACCUMULATED DEFICIT	ACCUMULATED OTHER COMPREHENSIVE INCOME	STOCKHOLDERS' EQUITY	COMPREHENSIVE INCOME (LOSS)
	SHARES	AMOUNT					
(IN THOUSANDS)							
Balance at December 31, 1995.....	19,808	\$20	\$53,855	\$ (16,866)	\$ --	\$ 37,009	\$ 5,918
Net income.....	--	--	--	5,918	--	5,918	5,918
Other comprehensive income.....							5,918
Exercise of stock options.....	416	--	240	--	--	240	
Issuance of Common Stock							

under Stock Purchase Plan.....	98	--	474	--	--	474	
Balance at December 31, 1996.....	20,322	20	54,569	(10,948)	--	43,641	
Net income.....	--	--	--	4,929	--	4,929	\$ 4,929
Currency translation.....	--	--	--	--	23	23	23
Other comprehensive income.....							\$ 4,952
Exercise of stock options.....	370	1	611	--	--	612	
Issuance of Common Stock under Stock Purchase Plan.....	136	--	726	--	--	726	
Balance at December 31, 1997.....	20,828	21	55,906	(6,019)	23	49,931	
Net loss.....	--	--	--	(21,453)	--	(21,453)	\$ (21,453)
Currency translation.....	--	--	--	--	(13)	(13)	(13)
Other comprehensive loss...							\$ (21,466)
Exercise of stock options.....	374	--	784	--	--	784	
Issuance of Common Stock under Stock Purchase Plan.....	174	--	830	--	--	830	
Acquisition of New Media Communication Ltd.....	2,076	2	13,393	--	--	13,395	
Balance at December 31, 1998.....	23,452	\$23	\$70,913	\$(27,472)	\$ 10	\$ 43,474	

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

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CONSOLIDATED STATEMENT OF CASH FLOWS

	YEAR ENDED DECEMBER 31,		
	1998	1997	1996
	(IN THOUSANDS)		
Cash flows from operating activities:			
Net income (loss).....	\$(21,453)	\$ 4,929	\$ 5,918
Adjustments to reconcile net income (loss) to net cash (used in) provided by operating activities:			
Depreciation and amortization.....	4,283	3,441	2,506
Acquired in-process technology.....	14,000	--	--
Changes in assets and liabilities, net of effects of acquisition:			
Accounts receivable.....	(1,040)	(3,815)	(6,841)
Inventories.....	(6,393)	(692)	(5,606)
Prepaid expenses and other assets.....	1,697	139	(1,848)
Accounts payable.....	3,187	(1,896)	3,403
Accrued and other liabilities.....	3,694	(140)	2,781
Net cash (used in) provided by operating activities.....	(2,025)	1,966	313
Cash flows used in investing activities:			
Acquisition of property and equipment.....	(4,384)	(4,767)	(6,743)
Acquisition of New Media Communication Ltd., net of cash received.....	(280)	--	--
Long-term advances.....	--	(1,300)	--
Net cash used in investing activities.....	(4,664)	(6,067)	(6,743)
Cash flows from financing activities:			
Proceeds from issuance of Common Stock.....	1,614	1,338	714
Borrowings under bank line and term loan.....	1,377	--	--
Repayments under bank line and term loan.....	(800)	--	--
Net cash provided by financing activities.....	2,191	1,338	714
Effect of exchange rate changes on cash and cash			

equivalents.....	6	23	--
	-----	-----	-----
Net decrease in cash and cash equivalents.....	(4,492)	(2,740)	(5,716)
Cash and cash equivalents at beginning of period.....	13,670	16,410	22,126
	-----	-----	-----
Cash and cash equivalents at end of period.....	\$ 9,178	\$13,670	\$16,410
	=====	=====	=====
Supplemental disclosure of cash flow information:			
Interest paid during the period.....	\$ 80	\$ --	\$ 21
Income taxes paid during the period.....	\$ 146	\$ 323	\$ 285

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

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#### NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

##### NOTE 1: ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Harmonic Inc. ("Harmonic" or the "Company") designs, manufactures and markets digital and fiber optic systems for delivering video, voice and data services over cable, satellite and wireless networks. Our advanced solutions enable cable television and other network operators to provide a range of broadcast and interactive broadband services that include high-speed Internet access, telephony and video on demand. We offer a broad range of fiber optic transmission and digital headend products for hybrid fiber coax, satellite and wireless networks, and our acquisition of New Media Communication Ltd. in January 1998 has allowed us to develop and expand our product offerings to include high-speed data delivery software and hardware.

Reincorporation and Reverse Stock Split. The Company originally incorporated in California in June 1988. In May 1995, the Company reincorporated in Delaware. In conjunction with the reincorporation, all outstanding shares of the predecessor California company were exchanged into common stock of the Delaware company in a one-for-three reverse stock split.

Basis of Presentation. The consolidated financial statements of the Company include the financial statements of the Company and its wholly-owned subsidiaries. All intercompany accounts and balances have been eliminated. The Company's fiscal quarters end on the Friday nearest the calendar quarter end.

Use of Estimates. The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reported period. Actual results could differ from those estimates.

Cash Equivalents. The Company considers all highly liquid investments purchased with an original maturity date of three months or less at the date of purchase to be cash equivalents and are stated at amounts that approximate fair value, based on quoted market prices. The Company's investments are classified as held-to-maturity.

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

Revenue Recognition. Revenue is recognized upon shipment of product except when probability of collection is not assured or contract provisions require customer acceptance. In these situations, revenue is recognized when collection is assured or customer acceptance has occurred. The Company does not provide rights of return to end users or distributors. A provision for the estimated cost of warranty is recorded at the time revenue is recognized.

Inventories. Inventories are stated at the lower of cost, using the weighted average method, or market.

Property and Equipment. Property and equipment are recorded at cost. Depreciation and amortization are computed using the straight-line method based upon the shorter of the estimated useful lives of the assets, which range from two to ten years, or the lease term of the respective assets, if applicable. Depreciation and amortization expense related to equipment and improvements for the years ended December 31, 1998 and 1997 was \$3,979,000 and \$3,441,000, respectively.

Intangibles and Other Assets. Goodwill acquired in connection with the acquisition of businesses is included in "Intangibles and other assets." Amortization is provided on a straight-line basis over the estimated useful life of five years. See Notes 2 and 4.

Long-Lived Assets. The Company records impairment losses on long-lived assets used in operations, such as equipment and improvements, and intangible assets when indicators of impairment are present and the undiscounted cash flows estimated to be generated by those assets are less than the carrying amounts of the assets.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

Concentrations of Credit Risk. Financial instruments which subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents and accounts receivable. Cash and cash equivalents are maintained with high quality financial institutions and are invested in short-term, highly liquid investment grade obligations of government and commercial issuers, in accordance with the Company's investment policy. The investment policy limits the amount of credit exposure to any one financial institution or commercial issuer. The Company's accounts receivable are derived from sales to cable television and other network operators and distributors as discussed in Note 12. The Company performs ongoing credit evaluations of its customers and generally does not require collateral. The Company provides for expected losses but to date has not experienced any material losses. At December 31, 1998, receivables from three customers represented 24%, 15%, and 14%, respectively. At December 31, 1997, receivables from one customer represented 25% of accounts receivable.

Currency Translation. The Company's Israeli operations' functional currency 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 are included in stockholders' equity. Realized gains and losses resulting from foreign currency transactions have not been material to the consolidated statements of operations for the years ended December 31, 1998, 1997, and 1996.

Income Taxes. Deferred tax assets and liabilities are recognized for the expected tax consequences of temporary differences between the tax bases of assets and liabilities and their financial statement reported amounts under the provisions of Statement of Financial Accounting Standards No. 109 ("SFAS 109"), which has been applied for all periods presented.

Accounting for Stock-Based Compensation. The Company's stock-based compensation plans are accounted for in accordance with Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees." In January 1996, the Company adopted the disclosure requirements of Statement of Financial Accounting Standards 123 ("SFAS 123").

Comprehensive Income. Effective January 1, 1998, the Company adopted Statement of Financial Accounting Standards No. 130, "Reporting Comprehensive Income" ("SFAS 130"). SFAS No. 130 requires that all items recognized under accounting standards as components of comprehensive income be reported in an

annual financial statement that is displayed with the same prominence as other annual financial statements. The Company's comprehensive income has been included in the Consolidated Statement of Stockholders' Equity for all periods presented.

Accounting for Derivatives and Hedging Activities. In June 1998, the Financial Accounting Standards Board issued Statement No. 133 "Accounting for Derivative Instruments and Hedging Activities" ("SFAS 133"). SFAS 133 requires companies to record derivatives on the balance sheet as assets or liabilities, measured at fair value. Gains or losses resulting from changes in the values of those derivatives will be reported in the statement of operations or as a deferred item, depending on the use of the derivatives and whether they qualify for hedge accounting. The Company does not expect SFAS 133 to have an impact upon the Company's consolidated financial statements, as the Company does not engage in hedging activities.

Reclassification. Certain amounts in prior years' financial statements and related notes have been reclassified to conform to the 1998 presentation. These reclassifications are not material.

NOTE 2: ACQUISITION OF NEW MEDIA COMMUNICATION LTD.

On January 5, 1998, the Company acquired New Media Communication Ltd. ("NMC"), a privately held supplier of broadband, high-speed data delivery software and hardware, in exchange for the issuance of 2,075,822 shares of Harmonic Common Stock and the assumption of all outstanding NMC stock options. NMC has been a development stage company since its founding in 1996 and its revenues through 1998 were not material in relation to those of the Company. The acquisition was accounted for using the purchase method of accounting. Accordingly, the results of operations of NMC have been included in the consolidated

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

financial statements of the Company from the date of acquisition. The purchase price of approximately \$17.6 million was allocated to the acquired assets, in-process research and development ("IPRD") and goodwill. In connection with the acquisition, \$14.0 million was expensed in the first quarter of 1998 as IPRD and approximately \$1.5 million was allocated to goodwill. The goodwill is being amortized on a straight-line basis over the estimated useful life of five years.

The portion of the purchase price allocated to IPRD was identified and valued through extensive interviews, analysis of data provided by NMC concerning development projects, their stage of development, the time and resources needed to complete them and their expected income generating ability and associated risks. The income approach, which includes an analysis of the cash flows, and risks associated with achieving such cash flows, was used in valuing the IPRD. Management is primarily responsible for estimating the fair value of the IPRD.

At the time of the acquisition, NMC had commenced development of the CyberStream System, a digital system for high-speed data transmission over cable, wireless and satellite networks. The CyberStream System was NMC's only research and development project in process at the acquisition date. Technological feasibility of the acquired technology had not been established at the time of the acquisition and the acquired technology had no future alternative uses. No value was attributed to NMC's existing analog products as management believed that no further revenue would be generated due to obsolescence.

The value of IPRD was determined by estimating the expected cash flows from the acquired technology and discounting the net cash flows back to their present values based on the following assumptions:

Net cash flows. The net cash flows are based on estimates of revenue, cost of sales, operating expenses and income taxes for the project. At the date of the acquisition, management expected commercial release of the CyberStream system to commence by the middle of fiscal year 1998 and for revenues to increase through fiscal year 2002, at which time they were assumed to decrease through fiscal year 2007, as newer products would be released. The valuation assumed that projected margins would increase based on higher sales volumes and expenses would increase based on the growth of the business.

Discount rate. Discounting the net cash flows back to their present value was based on the industry weighted average cost of capital ("WACC") of 16%. The risk-adjusted discount rate applied to the cash flows from IPRD was 20%. The risk premium of 4% for IPRD was due to inherent uncertainties surrounding the acquired technology. The most significant risks associated with the acquired technology include consumer acceptance, technology and resource risks.

The following table sets forth the pro-forma net sales, net income and net income per share of the Company for the year ended December 31, 1997, giving effect to the acquisition of NMC as if it had occurred as of the beginning of the period presented:

	PRO FORMA (UNAUDITED)
	1997
	(IN THOUSANDS, EXCEPT PER SHARE DATA)
Net sales.....	\$75,086
Net income.....	\$ 1,903
Net income per share:	
Basic.....	\$ 0.08
Diluted.....	\$ 0.08
Weighted average shares:	
Basic.....	22,766
Diluted.....	25,122

NOTE 3: CASH AND CASH EQUIVALENTS

At December 31, 1998 and 1997, the Company had the following amounts in cash and cash equivalents, with original maturity dates of three months or less at the date of purchase. Realized gains and losses for the years ended December 31, 1998 and 1997 and the difference between gross amortized cost and estimated fair value at December 31, 1998 and 1997 were immaterial.

	DECEMBER 31,	
	1998	1997
	(IN THOUSANDS)	
Commercial paper.....	\$2,154	\$ 7,956
Cash and money market accounts.....	7,024	5,714
	-----	-----
Total cash and cash equivalents.....	\$9,178	\$13,670
	=====	=====

NOTE 4: BALANCE SHEET DETAILS

	DECEMBER 31,	
	1998	1997
	(IN THOUSANDS)	
Accounts receivable:		
Gross accounts receivable.....	\$18,646	\$17,208
Less: allowance for doubtful accounts.....	(1,000)	(750)
	-----	-----
	\$17,646	\$16,458
	=====	=====
Inventories:		
Raw materials.....	\$ 3,747	\$ 4,356
Work-in-process.....	4,557	3,127
Finished goods.....	14,081	7,991
	-----	-----
	\$22,385	\$15,474
	=====	=====
Property and equipment:		
Furniture and fixtures.....	\$ 2,051	\$ 1,585
Machinery and equipment.....	19,854	15,692
Leasehold improvements.....	2,779	2,779
	-----	-----
	24,684	20,056
Less: accumulated depreciation and amortization.....	(13,958)	(9,979)
	-----	-----
	\$10,726	\$10,077
	=====	=====
Intangibles and other assets:		
Other assets.....	\$ 98	\$ 134
Goodwill.....	1,520	--
	-----	-----
	1,618	134
Less: accumulated amortization.....	(304)	--
	-----	-----
	\$ 1,314	\$ 134
	=====	=====
Accrued liabilities:		
Accrued compensation.....	\$ 3,655	\$ 1,837
Customer deposits.....	2,234	101
Deferred revenue.....	1,466	402
Accrued warranties.....	575	626
Other.....	2,425	1,930
	-----	-----
	\$10,355	\$ 4,896



## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

## NOTE 5: NET INCOME (LOSS) PER SHARE

During the quarter ended December 31, 1997, the Company adopted Statement of Financial Accounting Standards No. 128, "Earnings Per Share" ("SFAS 128"). SFAS 128 requires presentation of both Basic EPS and Diluted EPS on the face of the statement of operations. Basic EPS, which replaces primary EPS, is computed by dividing net income available to common stockholders (numerator) by the weighted average number of common shares outstanding (denominator) during the period. Unlike the computation of primary EPS, Basic EPS excludes the dilutive effect of stock options and warrants. Diluted EPS replaces fully diluted EPS and gives effect to all dilutive potential common shares outstanding during a period. In computing Diluted EPS, the average price for the period is used in determining the number of shares assumed to be purchased from exercise of stock options and warrants rather than the higher of the average or ending price as used in the computation of fully diluted EPS.

Following is a reconciliation of the numerators and denominators of the Basic and Diluted EPS computations:

	1998	1997	1996
	-----	-----	-----
	(IN THOUSANDS, EXCEPT PER SHARE DATA)		
Net income (loss) (numerator).....	\$(21,453)	\$ 4,929	\$ 5,918
	=====	=====	=====
Shares calculation (denominator):			
Average shares outstanding -- basic.....	23,244	20,690	20,212
Effect of Dilutive Securities:			
Potential Common Stock relating to stock options and warrants.....	--	2,356	2,736
	-----	-----	-----
Average shares outstanding -- diluted.....	23,244	23,046	22,948
	=====	=====	=====
Net income (loss) per share -- basic.....	\$ (0.92)	\$ 0.24	\$ 0.29
	=====	=====	=====
Net income (loss) per share -- diluted.....	\$ (0.92)	\$ 0.21	\$ 0.26
	=====	=====	=====

Options and warrants to purchase 5,888,236, 1,028,300 and 159,500 shares of common stock were outstanding during 1998, 1997 and 1996, respectively, but were not included in the computation of diluted EPS because either the option's exercise price was greater than the average market price of the common shares or inclusion of such options would have been antidilutive. The price ranges of these options and warrants were from \$0.15 to \$11.37 per share for 1998, \$8.25 to \$11.37 per share for 1997 and \$8.44 to \$11.37 per share for 1996.

All per share amounts have been retroactively adjusted to reflect the two-for-one stock split made effective on October 14, 1999.

## NOTE 6: LINE OF CREDIT

During 1998, the Company had a bank line of credit facility (the "line"), providing for borrowings of up to \$12,000,000. The line was available until

December 1998. As discussed in Note 14, the Company renegotiated its bank line of credit facility in the fourth quarter of 1998 and finalized the amended and restated facility in March 1999. The line contained certain financial covenants and interest on borrowings was at the bank's prime rate or LIBOR plus 2%. The Company has guaranteed certain borrowings of its subsidiaries totaling \$0.9 million with letters of credit and has total letters of credit issued under the line of \$2.7 million which expire at various dates throughout fiscal year 1999. There were no outstanding borrowings at December 31, 1998 and 1997.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

NOTE 7: LONG-TERM DEBT

During 1998, the Company had an equipment term loan (the "term loan") facility, providing for borrowings of up to \$3,000,000 on a secured basis. The outstanding principal balance of the term loan on December 31, 1998 is payable in 36 monthly installments beginning January 1999. As of December 31, 1998, borrowings of \$577,000 were outstanding under the term loan. Interest on borrowings is at the bank's prime rate plus 0.5%, payable monthly. Aggregate principal payments required under the term loan are \$177,000, \$191,000, and \$209,000 for the years ending December 31, 1999, 2000, and 2001, respectively. The term loan was available until December 1998. As discussed in Note 14, the Company renegotiated its term loan facility in the fourth quarter of 1998 and finalized the amended and restated facility in March 1999.

Long-term debt consists of the following:

	DECEMBER 31,	
	-----	-----
	1998	1997
	-----	-----
	(IN THOUSANDS)	
Equipment term loan.....	\$ 577	\$ --
Less: current portion.....	(177)	--
	-----	-----
	\$ 400	\$ --
	=====	=====

NOTE 8: CAPITAL STOCK

Initial Public Offering. In May 1995, the Company completed its initial public offering ("IPO") of 5,200,000 shares of Common Stock, 1,200,000 of which were sold by existing stockholders, at a price of \$6.75 per share. Net proceeds to the Company were approximately \$24.2 million, after underwriter commissions and associated costs. Upon the closing of the IPO, all outstanding shares of Mandatorily Redeemable Convertible Preferred Stock automatically converted into 14,189,496 shares of Common Stock. Also effective with the closing of the IPO, the Company was authorized to issue 5,000,000 shares of undesignated Preferred Stock, of which none were issued or outstanding at December 31, 1998 and 1997.

Common Stock Warrants. In June 1994, the Company entered into a distribution agreement, in connection with which it issued a warrant to purchase up to 1,597,496 shares of Common Stock at \$2.78 per share. The warrant had a fair value of \$200,000, which was charged to results of operations in the second quarter of 1994. The warrant will become exercisable in June 1999 and expire at the earlier of six years from the date of issuance or the closing of a significant acquisition transaction, as defined in the warrant. The Company has

reserved 1,597,496 shares of Common Stock for issuance upon exercise of this warrant.

In 1993, the Company issued a warrant to purchase up to 44,444 shares of the Company's Common Stock at an exercise price of \$2.25 per share in conjunction with an equipment lease line facility. The fair value of the warrant was nominal, and the warrant expires at the earlier of seven years from the date of issuance or the merger or sale of the Company meeting certain criteria. The Company has reserved 44,444 shares of Common Stock for issuance upon exercise of this warrant.

NOTE 9: BENEFIT AND COMPENSATION PLANS

Stock Option Plans. In 1988, the Company adopted an incentive and non-statutory stock option plan (the "1988 Plan") for which 2,251,834 shares have been reserved for issuance. Following adoption of the 1995 Stock Plan (the "1995 Plan") at the effectiveness of the Company's IPO, no further grants have been, or will be, made under the 1988 Plan. Options granted under the 1988 Plan and the 1995 Plan are for periods not to exceed ten years. Exercise prices of incentive stock option grants under both plans must be at least 100% of the fair market value of the stock at the date of grant and for nonstatutory stock options must be at least 85% of the fair market value of the stock at the date of grant. Under both plans, the options generally vest 25% at one year from date of grant, and an additional 1/48 per month thereafter. The Company has reserved 3,240,000 shares of Common Stock for issuance under the 1995 Plan. Upon the closing of the acquisition of New Media

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

Communication Ltd. ("NMC") in January 1998, the 1997 Non-Statutory Option Plan (the "1997 Plan") became effective. The Company assumed all outstanding NMC options and issued new options at the closing totaling 800,000 shares. No further grants have been, or will be, made under the 1997 Plan. Options granted under the 1997 Plan were at fair market value and for periods not to exceed ten years with vesting generally under the same terms as the 1988 and 1995 plans.

Director Option Plan. Effective upon the IPO, the Company adopted the 1995 Director Option Plan (the "Director Plan") and reserved 100,000 shares of Common Stock for issuance thereunder. The Director Plan provides for the grant of nonstatutory stock options to certain nonemployee directors of the Company pursuant to an automatic, nondiscretionary grant mechanism.

The following table summarizes activities under the Plans:

	SHARES AVAILABLE FOR GRANT	STOCK OPTIONS OUTSTANDING	WEIGHTED AVERAGE EXERCISE PRICE
(IN THOUSANDS, EXCEPT EXERCISE PRICE)			
Balance at December 31, 1995.....	884	2,306	\$ 1.83
Options granted.....	(688)	688	6.36
Options exercised.....	--	(416)	0.49
Options canceled.....	14	(96)	2.87
	-----	-----	-----

Balance at December 31, 1996.....	210	2,482	3.28
Shares authorized.....	960	--	--
Options granted.....	(1,008)	1,008	9.04
Options exercised.....	--	(370)	1.65
Options canceled.....	308	(354)	7.13
	-----	-----	-----
Balance at December 31, 1997.....	470	2,766	5.11
Shares authorized.....	1,950	--	--
Options granted.....	(2,128)	2,128	6.24
Options exercised.....	--	(374)	2.10
Options canceled.....	240	(274)	7.28
	-----	-----	-----
Balance at December 31, 1998.....	532	4,246	\$ 5.80
	=====	=====	=====

The following table summarizes information regarding stock options outstanding at December 31, 1998:

RANGE OF EXERCISE PRICES -----	STOCK OPTIONS OUTSTANDING			STOCK OPTIONS EXERCISABLE	
	NUMBER OUTSTANDING AT DEC. 31, 1998 -----	WEIGHTED-AVERAGE REMAINING		NUMBER EXERCISABLE AT DEC. 31, 1998 -----	WEIGHTED-AVERAGE EXERCISE PRICE -----
		CONTRACTUAL LIFE (YEARS)	WEIGHTED-AVERAGE EXERCISE PRICE		
		(IN THOUSANDS, EXCEPT EXERCISE PRICE AND LIFE)			
\$ 0.15 - 0.90	690	3.8	\$0.36	690	\$0.36
1.12 - 2.32	250	8.1	1.68	236	1.67
3.60 - 6.87	1,576	8.2	5.70	568	5.58
7.06 - 11.37	1,730	8.9	8.65	362	9.27
	-----	---	---	-----	-----
	4,246	7.7	\$5.80	1,856	\$3.86
	=====	===	=====	=====	=====

The weighted-average fair value of options granted in 1998 was \$6.79. The weighted-average fair value of options granted in 1997 and 1996 was \$9.14 and \$6.47, respectively. Employee Stock Purchase Plan. Effective upon the IPO, the Company adopted the 1995 Employee Stock Purchase Plan (the "Purchase Plan") for which 800,000 shares have been reserved for issuance. The Purchase Plan enables employees to purchase shares at 85% of the fair market value of the Common Stock at the beginning or end of each six month purchase period. The Purchase Plan is intended to qualify as an "employee stock purchase plan" under

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

Section 423 of the Internal Revenue Code. 174,476, 136,542 and 97,954 shares were issued under the Purchase Plan during 1998, 1997 and 1996, respectively.

Fair Value Disclosures. The Company accounts for its stock-based compensation plans in accordance with the provisions of Accounting Principles Board Opinion No. 25. If compensation cost for the Company's stock-based compensation plans had been determined based on the fair value method at the grant dates, as prescribed in SFAS 123, the Company's net income (loss) and net income (loss) per share would have been as follows:

1998	1997	1996
-----	-----	-----
(IN THOUSANDS, EXCEPT PER SHARE DATA)		

Net income (loss):			
As reported.....	\$ (21,453)	\$4,929	\$5,918
Pro forma.....	(26,457)	3,209	4,474
Basic net income (loss) per share:			
As reported.....	\$ (0.92)	\$ 0.24	\$ 0.29
Pro forma.....	(1.14)	0.15	0.22
Diluted net income (loss) per share:			
As reported.....	\$ (0.92)	\$ 0.21	\$ 0.26
Pro forma.....	(1.14)	0.14	0.19

The fair value of each option grant is estimated on the date of grant using the Black-Scholes option pricing model with the following weighted average assumptions:

	EMPLOYEE STOCK OPTIONS			EMPLOYEE STOCK PURCHASE PLAN		
	1998	1997	1996	1998	1997	1996
Dividend yield.....	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volatility.....	65%	55%	47.5%	65%	55%	47.5%
Risk-free interest rate.....	4.4% - 5.6%	5.6% - 6.7%	5.2% - 6.5%	4.6% - 5.5%	5.1% - 6.3%	5.7%
Expected life (years).....	4	4	4	2	2	2

Retirement/Savings Plan. The Company has a retirement/savings plan which qualifies as a thrift plan under Section 401(k) of the Internal Revenue Code. This plan allows participants to contribute up to 20% of total compensation, subject to applicable Internal Revenue Service limitations. Effective April 1, 1997, the Company began to make discretionary contributions to the plan of \$0.25 per dollar contributed by eligible participants up to a maximum contribution per participant of \$750 per year.

NOTE 10: INCOME TAXES

The provision for income taxes consists of the following:

	DECEMBER 31,		
	1998	1997	1996
(IN THOUSANDS)			
Current:			
Federal.....	\$ --	\$168	\$246
Foreign.....	--	90	41
State.....	--	1	24
	----	----	----
	\$ --	\$259	\$311
	=====	=====	=====

The income tax provision reconciles to the provision at the federal statutory rate as follows:

	DECEMBER 31,		
	1998	1997	1996
	(IN THOUSANDS)		
Provision at statutory rate.....	\$ (7,294)	\$ 1,764	\$2,118
Differential in rates on foreign earnings.....	774	(111)	--
State taxes, net of federal benefit.....	--	1	16
Foreign sales corporation benefit.....	--	(176)	--
Acquired in-process technology and non-deductible goodwill.....	4,863	--	--
Utilization of net operating loss carryovers.....	--	(1,661)	(2,490)
Future benefits not currently recognized.....	2,116	364	429
Alternative minimum tax.....	--	51	162
Other.....	(459)	27	76
	\$ --	\$ 259	\$ 311
	=====	=====	=====

Deferred tax assets comprise the following:

	DECEMBER 31,		
	1998	1997	1996
	(IN THOUSANDS)		
Net operating loss carryovers.....	\$ 845	\$ 303	\$ 1,964
Research and development credit carryovers.....	3,285	2,452	2,112
Capitalized research and development costs.....	71	234	254
Reserves not currently deductible.....	2,814	1,657	1,187
Other.....	419	96	12
Total deferred tax assets.....	7,434	4,742	5,529
Valuation allowance.....	(7,434)	(4,742)	(5,529)
Net deferred assets.....	\$ --	\$ --	\$ --
	=====	=====	=====

The deferred tax assets valuation allowance at December 31, 1998, 1997 and 1996 is attributed to federal and state deferred tax assets. Management believes that sufficient uncertainty exists regarding the realizability of these items such that a full valuation allowance has been recorded.

At December 31, 1998, the Company had approximately \$1,968,000 of net operating loss carryovers for federal tax reporting purposes available to offset future taxable income; such carryovers will expire in the years ending 2009 through 2019. The federal net operating loss carryovers do not include approximately \$4,887,000 resulting from disqualifying dispositions or exercises of non-incentive stock options, the tax benefit of which, when realized, will be accounted for as an addition to capital in excess of par value, rather than as a reduction of the provision for income taxes. At December 31, 1998, the Company also had approximately \$2,175,000, and \$1,110,000, of research and development credit carryovers for federal and state tax reporting purposes, respectively. The federal research and development credit carryovers will expire in the years ending 2004 through 2019. The state research and development carryovers will be carried forward indefinitely, until utilized.

The amounts of and the benefit from net operating losses and tax credits that can be carried forward may be limited in the event of a cumulative stock ownership change of greater than 50% over a three year period.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

NOTE 11: RESEARCH AND DEVELOPMENT GRANTS

BIRD. In accordance with separate agreements signed with the Israel-U.S. Binational Industrial Research and Development Foundation ("BIRD") in December 1994 and December 1997, the Company obtained grants for research and development projects amounting to 50% of the actual expenditures incurred on each of the two projects subject to a maximum of \$560,000 and \$845,000, respectively. The Company earned the maximum of \$560,000 under the first grant, which was offset against research and development expenses from 1995 through 1997. Under the second grant, the Company earned approximately \$81,000 in 1998, which was also offset against research and development expenses for the same period. The Company is not obligated to repay the grants regardless of the outcome of its development efforts; however, it is obligated to pay the BIRD royalties at the rate of 2.5% - 5% of sales of any products or development resulting from such research, but not in excess of 150% of each grant. During 1998, approximately \$175,000 of royalty expense was incurred.

Chief Scientist. An agreement was signed in May 1998 with the Israeli Chief Scientist Office ("Chief Scientist") in which the Company obtained a grant for a research and development project amounting to 50% of the actual expenditures incurred, subject to a maximum of 1,113,000 Israeli Shekels which translated at the December 31, 1998 exchange rate approximates \$265,000. The Company earned \$265,000 during 1998, which was offset against research and development expense for the same period. The Company is not obligated to repay the grants regardless of the outcome of its development efforts; however, it is obligated to pay the Chief Scientist royalties at the rate of 3% - 5% of sales of any products or development resulting from such research, but not in excess of 100% of the grant. During 1998, royalty expenses incurred were not significant.

NOTE 12: GEOGRAPHIC INFORMATION AND SIGNIFICANT CUSTOMERS

The Company operates in one industry segment and markets its products worldwide through its own direct sales force and through systems integrators and distributors. The Company has a manufacturing facility located in the U.S., international sales and support centers in Europe and Asia, and its New Media Communication Ltd. subsidiary and a research and development facility in Israel.

	YEAR ENDED DECEMBER 31,		
	1998	1997	1996
	(IN THOUSANDS)		
Geographic information consists of the following:			
Net Sales:			
United States.....	\$47,422	\$30,651	\$26,122
Canada.....	7,208	12,806	9,119
China.....	11,647	8,254	1,139
United Kingdom.....	3,511	5,530	9,323
Other foreign countries.....	14,069	17,201	15,191
Total.....	\$83,857	\$74,442	\$60,894
Long-lived assets:			
United States.....	\$10,384	\$ 8,617	\$ 8,076
Israel.....	1,501	1,373	675
Other foreign countries.....	57	87	--
Total.....	\$11,942	\$10,077	\$ 8,751

The Company sells to a significant number of its end users through distributors. In 1998 sales to one domestic customer and one foreign distributor represented 17% and 11% of total net sales, respectively. In 1997, sales to one distributor represented 17% of total net sales. In 1996, sales to three distributors represented 15%, 15% and 13% of total net sales, respectively.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

In 1998, 1997 and 1996, sales of optical transmitters accounted for approximately 54%, 63%, and 71%, respectively, of net sales and sales of optical node receivers, return path and network management products accounted for approximately 35%, 37%, and 29%, respectively, of net sales. In 1998, TRANsend and CyberStream digital products accounted for 11% of net sales. There were no significant sales of digital products in 1997 or 1996.

## NOTE 13: COMMITMENTS AND CONTINGENCIES

Commitments. The Company leases its facilities under noncancelable operating leases which expire at various dates through 2006. Total rent expense related to these operating leases were \$1,602,000 \$1,413,000, and \$828,000, for 1998, 1997 and 1996, respectively. Future minimum lease payments under noncancelable operating leases at December 31, 1998, were as follows: (in thousands)

1999.....	\$ 1,479
2000.....	1,511
2001.....	1,415
2002.....	1,324
2003.....	1,352
Thereafter.....	3,848
	-----
	\$10,929
	=====

The Company has subleased a portion of its headquarters through December 1999. Under the terms of the sublease, the sublessee is required to make payments aggregating \$399,000 for 1999.

Contingencies. The Company is a party to certain litigation matters and claims which are normal in the course of its operations and, while the results of litigation and claims cannot be predicted with certainty, management believes that the final outcome of such matters will not have a materially adverse effect on the Company's consolidated financial position or results of operations.

## NOTE 14: SUBSEQUENT EVENTS

Amendment of Line of Credit. On March 5, 1999, the Company's amended and restated bank line of credit facility (the "line") was finalized, providing for borrowings of up to \$10,000,000 with a \$3,000,000 equipment term loan sub-limit (the "term loan"). The line contains certain financial covenants and is available until March 2000. Borrowings pursuant to the line bear interest at the bank's prime rate plus 0.5% (prime rate plus 1.0% under the term loan) and are payable monthly. The line is secured by substantially all of the assets of the Company. The outstanding principal balance of the term loan on March 5, 2000 will be payable in 36 monthly installments beginning April 2000.

Exercise of Common Stock Warrant. In March 1999, the Common Stock warrant issued in connection with the 1994 distribution agreement was amended whereby the warrant shall become exercisable immediately prior to the effectiveness of a registration statement of the Company's Common Stock, subject to certain conditions. In consideration of the acceleration of exercisability of the warrant, the warrant holder agreed to reduce the number of shares issuable under the warrant from 1,597,496 shares to 1,440,000 shares.



## PART III

Certain information required by Part III is omitted from this Report on Form 10-K in that the Registrant will file its definitive Proxy Statement for its Annual Meeting of Stockholders to be held on May 12, 1999, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the "1999 Proxy Statement"), not later than 120 days after the end of the fiscal year covered by this Report, and certain information included in the Proxy Statement is incorporated herein by reference.

## ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

- (a) Executive Officers -- See the section entitled "Executive Officers" in Part I, Item 1 hereof.
- (b) Directors -- The information required by this Item is incorporated by reference to the section entitled "Election of Directors" in the 1999 Proxy Statement.

## ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is included in the 1999 Proxy Statement under the caption "Executive Compensation" and is incorporated herein by reference.

## ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Information related to security ownership of certain beneficial owners and security ownership of management is set forth in the 1999 Proxy Statement under the caption "Security Ownership of Certain Beneficial Owners and Management" and is incorporated herein by reference.

## ITEM 13. CERTAIN RELATIONSHIPS AND TRANSACTIONS

Not applicable.

## PART IV

## ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

- (a) (1) Financial Statements. See Index to Financial Statements at Item 8 on page 27 of this Report:
- (a) (2) Exhibits. The documents listed on the Exhibit Index of this Report are filed herewith. The 1999 Proxy Statement shall be deemed to have been "filed" with the Securities and Exchange Commission only to the extent portions thereof are expressly incorporated herein by reference. Copies of the exhibits listed in the Exhibit Index will be furnished, upon request, to holders or beneficial owners of the Company's Common Stock.
- (b) Reports on Form 8-K. 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 Report on Form 10-K/2A to be signed on its behalf by the

undersigned, hereunto duly authorized, in the City of Sunnyvale, State of California, on February 23, 2000.

HARMONIC INC.

By: /s/ ANTHONY J. LEY

-----  
Anthony J. Ley  
Chairman of the Board,  
President and Chief  
Executive Officer

Pursuant to the requirements of the Securities and Exchange Act of 1934, this registration statement has been signed by the following persons in the capacities and on the date indicated.

SIGNATURE -----	TITLE -----	DATE ----
/s/ ANTHONY J. LEY ----- (Anthony J. Ley)	Chairman of the Board, President and Chief Executive Officer (Principal Executive Officer)	February 23, 2000
/s/ ROBIN N. DICKSON ----- (Robin N. Dickson)	Chief Financial Officer (Principal Financial and Accounting Officer)	February 23, 2000
/s/ BARRY LEMIEUX* ----- (Barry Lemieux)	Director	February 23, 2000
/s/ E. FLOYD KVAMME* ----- (E. Floyd Kvamme)	Director	February 23, 2000
/s/ DAVID A. LANE* ----- (David A. Lane)	Director	February 23, 2000
/s/ MOSHE NAZARATHY* ----- (Moshe Nazarathy)	Director	February 23, 2000
/s/ MICHEL L. VAILLAUD* ----- (Michel L. Vaillaud)	Director	February 23, 2000
*By: /s/ ROBIN N. DICKSON ----- (Robin N. Dickson) Attorney-In-Fact		

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#### EXHIBIT INDEX

The following Exhibits to this report are filed herewith, or if marked with a (i), (ii), (iii), (iv), (v), (vi), or (vii) are incorporated herein by reference.

EXHIBIT  
NUMBER  
-----

- 3.1(i) Certificate of Incorporation of Registrant.
- 3.2(i) Form of Restated Certificate of Incorporation of Registrant.
- 3.3(i) Bylaws of Registrant.
- 4.1(i) Form of Common Stock Certificate.
- 10.1(i)+ Form of Indemnification Agreement.
- 10.2(i)+ 1988 Stock Option Plan and form of Stock Option Agreement.
- 10.3(i)+ 1995 Stock Plan and form of Stock Option Agreement.
- 10.4(i)+ 1995 Employee Stock Purchase Plan and form of Subscription Agreement.
- 10.5(i)+ 1995 Director Option Plan and form of Director Option Agreement.
- 10.6(i) Registration and Participation Rights and Modification Agreement dated as of July 22, 1994 among Registrant and certain holders of Registrant's Common Stock.
- 10.7(i) Distributor Agreement dated June 15, 1994 by and between Registrant and Scientific-Atlanta, Inc.
- 10.8(i) Warrant to purchase Common Stock of Registrant issued to Scientific-Atlanta, Inc. on June 15, 1994.
- 10.10(i) Warrant to purchase Series D Preferred Stock of Registrant issued to Comdisco, Inc. on February 10, 1993.
- 10.14(ii) Business Loan Agreement, Commercial Security Agreement and Promissory Note dated August 26, 1993, as amended on September 14, 1995, between Registrant and Silicon Valley Bank.
- 10.15(ii) Facility lease dated as of January 12, 1996 by and between Eastrich No. 137 Corporation and Company.
- 10.16(iv) Amended and Restated Loan and Security Agreement dated December 24, 1997 between Registrant and Silicon Valley Bank.
- 10.17(iii)+ Change of Control Severance Agreement dated March 27, 1997 between Registrant and Anthony J. Ley.
- 10.18(iii)+ Form of Change of Control Severance Agreement between Registrant and certain executive officers of Registrant.
- 10.19(iv) Stock Purchase Agreement, dated September 16, 1997 among Registrant, N.M. New Media Communication Ltd., ("NMC") and Sellers of NMC.
- 10.20(v) First Amendment to Stock Purchase Agreement, dated November 25, 1997 among Registrant, N.M. New Media Communication Ltd., ("NMC") and Sellers of NMC.
- 10.21(vi) Registration Rights Agreement dated as of January 5, 1998 by and among the Registrant and the persons and entities listed on Schedule A thereto (the "NMC Shareholders").
- 10.22\* Second Amended and Restated Loan and Security Agreement dated March 5, 1999 between Registrant and Silicon Valley Bank.
- 10.23(vii) 1997 Nonstatutory Stock Option Plan.

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EXHIBIT  
NUMBER  
-----

- 21.1\* Subsidiaries of Registrant.
- 23.1 Consent of Independent Accountants.
- 24.1\* Power of Attorney.
- 27.1 Financial Data Schedule.

-----  
\* Previously Filed

(i) Previously filed as an Exhibit to the Company's Registration Statement on

Form S-1 No. 33-90752.

- (ii) Previously filed as an Exhibit to the Company's 10-K for the year ended December 31, 1995.
  - (iii) Previously filed as an Exhibit to the Company's 10-K for the year ended December 31, 1996.
  - (iv) Previously filed as an Exhibit to the Company's Current Report on 8-K dated September 29, 1997.
  - (v) Previously filed as an Exhibit to the Company's Current Report on 8-K dated January 6, 1998.
  - (vi) Previously filed as an Exhibit to the Company's Registration Statement on Form S-3 dated January 8, 1998.
  - (vii) Previously filed as an Exhibit to the Company's Registration Statement on Form S-8 dated January 14, 1998.
- + Management Contract or Compensatory Plan or Arrangement required to be filed as an exhibit to this report on Form 10-K.

## CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 33-94138, 333-38025, 333-44265, 333-65051 and 333-86649) of Harmonic Inc. of our report dated January 20, 1999, except as to Note 14, which is as of March 15, 1999, and Note 5, which is as of October 14, 1999, which appears on page 29 of this Annual Report on Form 10-K/2A.

PricewaterhouseCoopers LLP

San Jose, California

February 23, 2000

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