

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

FORM 10-K

(MARK ONE)

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

FOR THE FISCAL YEAR ENDED DECEMBER 31, 1999

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 or any amendment to this Form 10-K. _____

Based on the closing sale price of the Common Stock on the NASDAQ National Market System on February 25, 2000, the aggregate market value of the voting stock held by non-affiliates of the Registrant was \$2,832,880,041. 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 30,726,923 at February 25, 2000.

DOCUMENTS INCORPORATED BY REFERENCE

LOCATION IN

None

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PART I

ITEM 1. BUSINESS

This Annual Report on Form 10-K 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 Affect 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, telephone, 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. (now called Harmonic Data Systems Ltd.) in January 1998 has allowed us to develop and expand our product offerings to include high-speed data delivery software and hardware.

On October 27, 1999, Harmonic announced a definitive agreement to acquire the DiviCom business of C-Cube Microsystems, Inc. A registration statement on Form S-4 and definitive proxy materials for shareholders were filed with the Securities and Exchange Commission on March 23, 2000. [Consummation of the merger is subject to a number of conditions, including Harmonic and C-Cube shareholder approval, the prior disposition of C-Cube's semiconductor business and regulatory approvals. The shareholder meetings are scheduled to be held on April 24, 2000.]

The DiviCom business designs, manufactures and sells products and systems that enable satellite, wireless, telephone and cable companies to deliver digital video, audio and data over a variety of networks. By combining video compression technologies with network and communications technologies, the DiviCom business creates innovative products for producers and distributors of video and video-enhanced information. These products include encoders, multiplexers and network management systems, as well as systems integration services.

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. 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 56 Kbps.

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 result, AT&T has acquired TCI and MediaOne and announced plans to offer broadband and interactive services, including telephony, on a broad scale over these cable systems in the next few years. Similarly, RBOCs are deploying various digital subscriber line technologies, or DSL, 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 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 also 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 have begun to deploy cable modems in a number of major metropolitan areas. Cable modems provide significantly faster and easier access to the Internet than traditional 28 Kbps or 56 Kbps telephone modems. Cable modems are frequently offered in conjunction with Internet content services such as Excite@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 1999 was estimated to be approximately 1.6 million, compared to approximately 500,000 in 1998. 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 67 million U.S. cable subscribers, approximately 5.1 million homes subscribed to digital cable services at the end of 1999 and approximately 10.6 million homes will subscribe to digital cable services 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 networks to provide telephony services. AT&T has set targets of 30% local telephone market share in its initial deployments in cable systems.

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 HFC 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 these new services 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, AT&T has undertaken a trial in Salt Lake City in which optical fiber serves approximately 50 to 100 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. Competitive pressures and the desire to capture new revenue opportunities 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 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 \$52 billion and has announced its intention to acquire MediaOne for approximately \$57 billion;
- In January 2000, America Online and Time Warner announced their intention to merge in a transaction valued at over \$300 billion.

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 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 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 Harmonic Data Systems 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.

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 1550 nm 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 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 encoder converts analog and digital video and audio signals

to compressed digital format fully compliant with the MPEG-2 standard.

Integrated Receiver eXchange Modules. Our IRX module receives 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.

Video Server Gateways. Our VSG module acts as a gateway between a video server and subscribers on a network.

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 Enterprise1 product.

Enterprise1. The Enterprise1 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.

CUSTOMERS

We sell our products to a variety of broadband communications network operators. Set forth below is a representative list of our customers during 1999.

UNITED STATES	INTERNATIONAL
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Adelphia	A provincial PTT in China
AT&T	Austar
Bell South	Golden Channels
Charter	Hong Kong Cable Television
Comcast	Matav
Cox	NTL
Daniels	Rogers
MediaOne	Shaw
Prime	TeleDanmark
RCN	Telewest
Time-Warner	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 1999, sales to AT&T accounted for 41% of net sales. In 1998, sales to TCI (now AT&T) accounted for 17% of net sales and sales to a Chinese distributor accounted for 11% of net sales. In 1997, sales to Capella (our Canadian distributor) accounted for 17% of net sales. No other customer accounted for more than 10% of our net sales in 1999, 1998 or 1997. The loss of AT&T or any other significant customer or any reduction in orders by AT&T or 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 1999, 1998 and 1997 represented 30%, 43% and 59% 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. We 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."

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 JDS Uniphase, which has recently acquired a number of optical component suppliers. 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 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 14 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, 1999, order backlog amounted to \$55.2 million, compared to \$20.8 million at December 31, 1998. 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, 1999 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 (recently acquired by Motorola), 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 Lucent Technologies. Competitors for CyberStream products in the satellite and wireless market include Broadlogic, SkyStream Networks, 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. See "Risk Factors -- The Market In Which We Operate Is Intensely Competitive And Many Of Our Competitors Are Larger And More Established."

RESEARCH AND DEVELOPMENT

We have historically devoted a significant amount of our resources to research and development. Research and development expenses in 1999, 1998 and 1997 were \$17.3 million, \$13.5 million, and \$11.7 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, 1999, we employed a total of 454 people, including 197 in manufacturing operations, 112 in research and development, 105 in sales and

marketing and 40 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, 2000:

NAME	AGE	POSITION
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Anthony J. Ley...	61	Chairman of the Board of Directors, President and Chief Executive Officer
Moshe Nazarathy.....	48	Senior Vice President, General Manager Israel R&D Center, Director
Robin N. Dickson.....	52	Chief Financial Officer
Michael Yost.....	56	Vice President, Operations
Israel Levi.....	60	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 Stanford 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.

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 also have several sales offices in the United States, sales and support centers in Europe and Asia and two subsidiaries, Harmonic Data Systems Ltd., and a research and development facility in Israel. We also expect to enter into leases for

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additional buildings in the near future in order to accommodate employees of the DiviCom business after the merger.

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.

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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 as reported on the Nasdaq National Market:

	HIGH	LOW
	-----	-----
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
1999		
First quarter.....	\$ 14.44	\$ 7.44
Second quarter.....	\$ 29.50	\$13.50
Third quarter.....	\$ 73.31	\$26.00
Fourth quarter.....	\$100.88	\$47.00

(b) Holders of record: At February 25, 2000, there were approximately 129 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,				
	1999	1998	1997	1996	1995
(IN THOUSANDS, EXCEPT PER SHARE DATA)					
CONSOLIDATED STATEMENT OF OPERATIONS DATA:					
Net sales.....	\$184,075	\$ 83,857	\$74,442	\$60,894	\$39,180
Gross profit.....	80,605	30,555	34,605	27,731	17,851
Income (loss) from operations(1).....	29,017	(21,943)	4,506	5,204	3,761
Net income (loss) (1).....	23,680	(21,453)	4,929	5,918	4,121
Basic net income (loss) per share.....	0.84	(0.92)	0.24	0.29	0.36
Diluted net income (loss) per share.....	0.76	(0.92)	0.21	0.26	0.20
CONSOLIDATED BALANCE SHEET DATA:					
Cash, cash equivalents and investments.....	\$ 89,699	\$ 9,178	\$13,670	\$16,410	\$22,126
Working capital.....	121,172	32,318	38,772	34,321	32,495
Total assets.....	180,215	62,424	58,887	54,633	41,817
Long term debt, including current portion.....	--	577	--	--	--
Stockholders' equity.....	136,644	43,474	49,931	43,641	37,009

(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.

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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.

On October 27, 1999 the Company entered into an Agreement and Plan of Merger and Reorganization with C-Cube Microsystems, Inc. ("C-Cube"), pursuant to which C-Cube will merge into Harmonic (the "Merger Agreement"). Under the terms of the Merger Agreement, C-Cube will sell or spin-off to its shareholders all of the assets and liabilities of its semiconductor business prior to closing. C-Cube will then merge into Harmonic and, as a result, Harmonic will acquire C-Cube's DiviCom business. The DiviCom business designs, manufactures and sells products and systems that enable companies to deliver digital video, audio and data over a variety of networks including satellite, wireless, telephone and cable. The merger will be structured as a tax-free exchange of stock and will be accounted for under the purchase method of accounting. In the merger, each share of common stock of C-Cube will be converted into the right to receive .5427 shares of Harmonic common stock. Approximately 25.7 million shares of Harmonic Common Stock will be issued and the purchase price including acquisition related costs is expected to be approximately \$1.7 billion. Consummation of the merger is subject to a number of conditions, including Harmonic and C-Cube shareholder approval, the prior disposition of C-Cube's semiconductor business and regulatory approvals. The shareholder meetings are scheduled to be held on April 24, 2000.

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 1999, sales to AT&T accounted for 41% of net sales compared to 17% in 1998. In addition, in 1998 sales to a Chinese distributor accounted for 11% of net sales.

Sales to customers outside of the United States in 1999, 1998 and 1997 represented 30%, 43% and 59% 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.

In 1999, 1998 and 1997, sales of optical transmitters accounted for approximately 63%, 54% and 63%, respectively, of net sales and sales of optical node receivers, return path and network management products accounted for approximately 32%, 35% and 37%, respectively, of net sales. In 1999 and 1998, TRANSend and CyberStream digital products accounted for 5% and 11% of net sales. There were no significant sales of digital products in 1997.

Harmonic recognizes revenue upon shipment of products except when probability of collection is not assured or contract provisions require customer acceptance. 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 and adjusted periodically to reflect actual and anticipated experience. 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.

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, 1997, 1998 and 1999 as a percentage of net sales, are as follows:

	FISCAL YEAR ENDED DECEMBER 31,		
	1999	1998	1997
Net sales.....	100%	100%	100%
Cost of sales.....	56	64	54
Gross profit.....	44	36	46
Operating expenses			
Research and development.....	9	16	16
Sales and marketing.....	14	21	18
General and administrative.....	5	8	6
Acquired in-process technology.....		17	--
Total operating expenses.....	28	62	40

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Income (loss) from operations.....	16	(26)	6
Interest and other income, net.....	1	--	1
	---	---	---
Income (loss) before income taxes.....	17	(26)	7
Provision for income taxes.....	4	--	--
	---	---	---
Net income (loss).....	13%	(26)%	7%
	==	==	==

Net Sales

The Company's net sales increased 119% to \$184.1 million in 1999, from \$83.9 million in 1998. The increase in net sales was primarily due to higher unit sales of METROLink DWDM systems and PWRBlazer Scaleable Nodes, which began volume shipment during the middle of 1998, and, to a lesser extent, higher unit sales of existing products partially offset by lower selling prices. The increase was also attributable to increased spending by domestic and international customers. During 1999 domestic sales increased by 172%, principally due to increased shipments to AT&T. AT&T represented 41% of net sales during 1999 compared to 17% of net sales in 1998. International sales increased 51% during 1999 compared to 1998, primarily due to higher shipments to Canada and the United Kingdom. International sales represented 30% of net sales in 1999 compared to 43% in 1998. Net sales increased by 13% to \$83.9 million in 1998, from \$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 domestic customers in the second half of 1998. During 1998 domestic sales increased by 55%, principally due to increased shipments to AT&T, 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.

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Gross Profit

Gross profit increased to \$80.6 million (44% of net sales) in 1999 from \$30.6 million (36% of net sales) in 1998. The increases in gross profit and gross margin were principally due to higher unit volumes, which allowed the Company to improve fixed cost absorption and realize increased economies of scale through higher production and purchasing volumes, as well as a more favorable product mix, which included a higher percentage of transmitters. 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 margin 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 margin were negatively impacted 1998 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.

Research and Development

Research and development expenses increased to \$17.3 million (9% of net sales) in 1999, from \$13.5 million (16% of net sales) in 1998. The increase in absolute spending was principally attributable to higher headcount, consulting expenses and prototype expenses. These increases were partially offset by higher amounts of government grants earned in Israel, which are netted against research and development expenses. The decrease in research and development expenses as a percentage of net sales was principally attributable to increased net sales. 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 in absolute dollars was primarily due to increased headcount, particularly at Harmonic's subsidiary in Caesarea, Israel, which develops 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 for 1999, 1998 and 1997 are net of grants of

approximately \$950,000, \$346,000 and \$120,000, 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 \$25.0 million (14% of net sales) in 1999 from \$18.2 million (21% of net sales) in 1998. The increase in absolute dollars was primarily due to higher headcount and costs associated with expansion of the sales and marketing organizations to provide wider geographic coverage and support for new products, as well as higher sales commissions related to increased net sales. The decrease in sales and marketing expenses as a percentage of net sales was principally attributable to increased net sales. 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 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 new products. This increase included 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. 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 \$9.3 million (5% of net sales) in 1999, from \$6.8 million (8% of net sales) in 1998. The increase in absolute dollars in 1999 was principally due to increased personnel, consulting and recruiting expenses associated with supporting the Company's overall growth in headcount and operations. The decrease in general and administrative expenses as a percentage of net sales was attributable to increased net sales. 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

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1998, as well as costs of supporting Harmonic's growth in overall headcount, and the establishment of international sales and support offices. 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 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 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.

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Interest and Other Income, Net

Interest and other income, net, consisting principally of interest income, was \$2.6 million in 1999, \$0.5 million in 1998 and \$0.7 million in 1997. The increase in 1999 was due primarily to interest earned on cash and cash equivalents and marketable investments, following the closing of the Company's public offering of common stock in April 1999. The decrease in 1998 was due primarily to lower interest income on lower average cash and cash equivalents balances.

Income Taxes

The provision for income taxes for 1999 was based on an estimated annual tax rate of 25%. No provision for income taxes was recorded for 1998 due to the net loss incurred. The provision for income taxes for 1997 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. The Company expects to have an effective annual tax rate that approximates statutory rates in year 2000 and beyond on income before amortization of goodwill and other intangibles related to the C-Cube merger. See "Risk Factors -- If The C-Cube Merger Is Completed, We Will Record Substantial Goodwill And Other Intangible Assets And Report Substantial Net Losses".

LIQUIDITY AND CAPITAL RESOURCES

In April 1999 the Company completed a public offering of its common stock, raising approximately \$58.3 million, net of underwriting discounts and offering expenses. The Company also received \$4.0 million from exercise of a warrant. As of December 31, 1999, cash and cash equivalents and short-term investments totaled \$89.7 million.

Cash provided by operations was \$21.7 million in 1999 compared to cash used in operations of \$2.0 million in 1998. The increase in cash provided by

operations in 1999 was primarily due to net income in 1999 compared to a net loss in 1998, and higher accounts payable and accrued liabilities partially offset by higher accounts receivable, inventory and prepaid expenses and other assets.

The Company has a bank line of credit facility which provides for borrowings up to \$10.0 million with a \$3.0 million equipment term loan sub-limit and expires in July 2000. Borrowings pursuant to the line bear interest at the bank's prime rate (prime rate plus 0.5% under the term loan) and are payable monthly. The Company has letters of credit issued under the line of \$0.6 million which expire at various dates throughout year 2000. There were no outstanding borrowings at December 31, 1999 and 1998 under the line.

Additions to property, plant and equipment were approximately \$9.3 million during 1999 compared to \$4.4 million in 1998. The increase in 1999 was due principally to higher expenditures for manufacturing and test equipment associated with expansion of production capacity. While Harmonic currently has no material commitments, it expects to spend approximately \$15.0 million on capital expenditures in 2000, primarily for manufacturing and test equipment. If the C-Cube merger is completed, the Company expects to spend substantially more on capital expenditures, but as of this date is unable to quantify the amount.

The Company believes that its existing liquidity sources, including its bank line of credit facility, and anticipated funds from operations will satisfy its cash requirements for at least the next twelve months if the C-Cube merger were not to be completed. However, the Company expects the merger to be completed, and believes that its existing liquidity sources, cash of \$60 million to be received pursuant to the merger agreement and cash to be received for the estimated tax liability related to the spin-off of the semi-conductor business will satisfy the cash requirements of the combined Company for at least the next twelve months. See "Risk Factors -- We May Need Additional Capital In The Future And May Not Be Able To Secure Adequate Funds In Terms Acceptable To Us."

YEAR 2000 DISCLOSURE

Thus far, the Company has not experienced any significant problems related to year 2000 issues associated with products under development or released, or with the Company's internal computer systems.

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However, the Company cannot guarantee that the year 2000 problem will not adversely affect its business, operating results or financial condition at some point in the future.

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;

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- the status of federal, local and foreign government regulation of telecommunications and television broadcasting;
- 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 during the last seven quarters from the level achieved in the first quarter of 1998 due to increased spending in the North American cable television industry, spending by cable television operators outside of North America generally remained weak. While net sales outside of North America increased during the third and fourth quarters of 1999 compared to the first quarter of 1998 we cannot predict if cable television spending outside of North America will continue to grow or whether cable television spending in North America will continue to increase. 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 1997, 1998 and 1999 accounted for approximately 56%, 66% and 75%, respectively, of net sales. Due in part to the consolidation of ownership of domestic cable television systems, we expect that sales to AT&T and relatively few other customers will continue to account for a significant percentage of our net sales for the foreseeable future. In 1999, sales to AT&T accounted for 41% of our net sales compared to 17% in 1998. In addition, in 1998 sales to a Chinese distributor accounted for 11% of our net sales. 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 1997, 1998 and 1999 represented 59%, 43% and 30% 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;

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- 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;
- 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 years, 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 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. In particular, we cannot predict the effect on our business, if any, of recent political tensions between the U.S. and China.

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 AT&T), General Instrument (which was recently acquired by Motorola), Philips and Scientific-Atlanta. Additional competition could come from new entrants in the broadband communications equipment market, such as Lucent Technologies and Cisco Systems. 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.

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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.

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

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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, which changed its name during 1999 to Harmonic Data Systems Ltd., or HDS, 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.

Our Failure To Complete The C-Cube Merger May Adversely Affect Our Business.

The Merger Agreement with C-Cube contains conditions which we and/or C-Cube must meet prior to the consummation of the merger, including:

- Harmonic stockholder approval of the merger;
- C-Cube stockholder approval of the merger;
- Neither Harmonic nor C-Cube having experienced any material adverse change in its business;
- Neither Harmonic nor C-Cube having materially breached any of its representations, warranties or covenants in the Merger Agreement;
- C-Cube having effected a sale or spin-off of its semiconductor division; and
- There being no law or court order prohibiting the merger.

In the event that the merger is not completed the market price for our common stock could decline. In addition, pursuant to Section 7.3 of the Merger Agreement, the Merger Agreement may be terminated by either party under certain circumstances. Each of Harmonic and C-Cube has agreed that if the merger is not consummated as a result of certain specified events, it will pay to the other party a termination fee of \$50 million. Payment of the fees described in this paragraph are not in lieu of damages incurred in the event of willful breach of the Merger Agreement. If the merger is not consummated, legal, accounting and financial

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advisory fees as well as expenses incurred in connection with the proposed combination, in addition to the consummation and implementation of the merger and possible "break up fees" described above, could materially and adversely affect Harmonic's operating results.

There are numerous risks associated with the C-Cube merger including those identified in this report. For a more complete discussion of risks we face, we urge you to read the risks set forth in the joint proxy statement filed with the Securities and Exchange Commission on March 23, 2000.

If The C-Cube Merger Is Completed, We Will Record Substantial Goodwill And Other Intangible Assets And Report Substantial Net Losses.

Goodwill and other intangible assets of approximately \$1.3 billion are expected to be recorded in connection with the merger as disclosed in the pro forma financial data presented in the joint proxy statement. While the purchase price allocation has not been finalized, goodwill and intangibles are expected to be amortized over approximately 5 years, and such amortization is expected to result in substantial net losses as a result of the noncash charges commencing in the year 2000. The amortization of goodwill and intangibles are not deductible for tax purposes which will result in a provision for income taxes despite a substantial reported net loss.

We Will Be Liable For C-Cube Microsystems' Pre-Merger Tax Liabilities,

Including Tax Liabilities Resulting From The Spin-Off Of Its Semiconductor Business.

We believe that the spin-off of the semiconductor business will give rise to a significant tax liability which would be approximately \$203 million based on an assumed valuation of the semiconductor business of \$975 million. The actual tax liability may differ significantly from the estimate based on the facts and circumstances existing at the time of the spin-off. For example, the value of the stock of the spun-off semiconductor business will likely fluctuate and if such value at the time of the spin-off exceeds the assumed value, the actual tax liability will exceed the estimated tax liability. Under state law, Harmonic generally will become liable for all of C-Cube Microsystems' debts, including C-Cube Microsystems' liability for taxes resulting from the spin-off. C-Cube Microsystems is required to retain and transfer to Harmonic in the merger an amount of cash sufficient to pay this liability as well as all other tax liabilities of C-Cube Microsystems and its subsidiaries for periods prior to the merger. Harmonic will be indemnified by the spun-off semiconductor business if the cash reserves are not sufficient to satisfy all of C-Cube Microsystems' tax liabilities for periods prior to the merger. If for any reason, the spun-off semiconductor business does not pay such taxes, or if there are additional taxes due with respect to the non-semiconductor business, Harmonic generally will remain liable, and such liability could have a material adverse effect on Harmonic.

Due To The Structure Of The Merger Transaction, Harmonic Will Be Liable For C-Cube Microsystems' General Pre-Merger Liabilities And Any Liabilities Relating To C-Cube Microsystems' Semiconductor Business For Which The Spun-off Semiconductor Business Is Unable To Indemnify Harmonic.

The merger of C-Cube Microsystems into Harmonic, with Harmonic as the surviving entity, will result in Harmonic assuming all of the liabilities of C-Cube Microsystems at the time of the merger. Pursuant to the merger agreement, Harmonic will be indemnified by the spun-off semiconductor business for liabilities associated with C-Cube Microsystems' historic semiconductor business. However, if the spun-off semiconductor business is unable to fulfill its indemnification obligations to Harmonic or if general liability claims not specifically associated with C-Cube Microsystems' historic semiconductor business are asserted after the merger, we would have to assume such obligations. Those obligations could have a material adverse effect on Harmonic.

If The C-Cube Merger Is Completed, We May Experience Difficulties Integrating The DiviCom Business Of C-Cube.

In addition to the risks generally associated with acquisitions, there are a number of significant risks directly associated with our proposed merger with C-Cube. In particular, the successful combination of

Harmonic and C-Cube will require substantial attention from management. The anticipated benefits of the merger will not be achieved unless the operations of the DiviCom business of C-Cube are successfully combined with those of Harmonic in a timely manner. The difficulties of assimilation may be increased by the need to integrate disparate information systems and personnel into a combined corporation and by Harmonic's limited personnel, management and other resources. The successful combination of the two companies will also require integration of the companies' product offerings and the coordination of their research and development and sales and marketing efforts. In addition, the process of combining the two organizations could cause the interruption of, or a loss of momentum in, the activities of either or both of the companies' businesses and certain customers may defer purchasing decisions. The diversion of the attention of management from the day-to-day operations of the combined company, or difficulties encountered in the transition and integration process, could also materially and adversely affect the business, financial condition and operating results of the combined company. In addition, the success of the combined company depends, in part, on the retention and integration of key management, technical, marketing, sales and customer support personnel of the DiviCom business of C-Cube. The success of the combined company will depend upon the retention of these key employees during the transitional period following the merger. Harmonic can offer no assurance that such key employees will remain with the combined company prior to or for any period after the proposed merger especially as competition for qualified technical and other personnel is intense, particularly in the San Francisco Bay Area. The loss of such services

would adversely affect the combined company's combined business and operating results.

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 14 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 On 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. If the C-Cube merger is consummated, we believe that our existing liquidity sources, cash of \$60 million to be received pursuant to the merger agreement, cash to be received for the estimated tax liability related to the spin-off of the semiconductor business, our bank line of credit facility and anticipated funds from operations will satisfy the cash requirements of the combined company 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 other potential acquisitions that would complement our existing product offerings or enhance our technical capabilities. While we have no other 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. In particular, certain optical components have been recently in short supply and are available only from a small number of suppliers, including sole source suppliers. While we expend considerable efforts to qualify additional optical component sources, consolidation of suppliers in the industry (including the proposed acquisition of Etek Dynamics by JDS Uniphase) and the small number of viable alternatives have limited the results of these efforts. 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 85 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 Issues.

Thus far, we have not experienced any significant problems related to year 2000 issues associated with products under development or released, or with our internal computer systems. However, we can not guarantee that the year 2000 problem will not adversely affect our business, operating results or financial condition at some point in the future.

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, 1999 and does not expect to do so in the foreseeable future.

Foreign Currency Exchange Rates

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.

Interest Rates

Changes in interest rates could impact the Company's anticipated interest income on its cash equivalents and short-term investments. The company prepared sensitivity analyses of its interest rate exposures to assess the impact of

hypothetical changes in interest rates. Based on the results of the analyses, a 10% adverse change in interest rates from the year end 1999 rates would not have a material adverse effect on the company's results of operations, cash flows or financial condition for the year 2000.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

(a) Index to Consolidated Financial Statements:

	PAGE

Report of Independent Accountants.....	29
Consolidated Balance Sheets as of December 31, 1999 and 1998.....	30
Consolidated Statement of Operations for the years ended, December 31, 1999, 1998 and 1997.....	31
Consolidated Statement of Stockholders' Equity for the years ended December 31, 1999, 1998, and 1997.....	32
Consolidated Statement of Cash Flows for the years ended December 31, 1999, 1998, and 1997.....	33
Notes to Consolidated Financial Statements.....	34

(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)

QUARTERLY DATA:	1999				1998			
	(IN THOUSANDS, EXCEPT PER SHARE DATA)							
	4TH	3RD	2ND	1ST	4TH	3RD	2ND	1ST
Net sales.....	\$63,286	\$52,624	\$37,902	\$30,263	\$27,097	\$22,382	\$18,174	\$ 16,204
Gross profit.....	29,142	23,096	15,956	12,411	10,369	8,434	6,662	5,090
Income (loss) from operations(1).....	13,496	9,325	4,429	1,767	583	(1,044)	(2,929)	(18,553)
Net income (loss) (1).....	14,378	7,692	3,855	1,349	628	(831)	(2,885)	(18,365)
Basic net income (loss) per share.....	0.35	0.25	0.13	0.06	0.03	(0.04)	(0.12)	(0.80)
Diluted net income (loss) per share.....	0.33	0.23	0.12	0.05	0.02	(0.04)	(0.12)	(0.80)

(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.

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, of stockholders' equity and of cash flows present fairly, in all material respects, the financial position of Harmonic Inc. and its subsidiaries at December 31, 1999 and 1998, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1999 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 18, 2000

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HARMONIC INC.

CONSOLIDATED BALANCE SHEETS

ASSETS

	DECEMBER 31,	
	1999	1998
(IN THOUSANDS, EXCEPT SHARE DATA)		
Current assets:		
Cash and cash equivalents.....	\$ 24,822	\$ 9,178
Short-term investments.....	64,877	--
Accounts receivable, net.....	35,421	17,646
Inventories.....	35,310	22,385
Deferred income taxes.....	5,478	--
Prepaid expenses and other assets.....	3,792	1,175
Total current assets.....	169,700	50,384
Property and equipment, net.....	14,931	10,726
Intangibles and other assets.....	1,062	1,314
	\$185,693	\$ 62,424
===== ======		

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities:		
Accounts payable.....	\$ 18,946	\$ 7,534
Income taxes payable.....	2,265	151
Accrued liabilities.....	19,073	10,204
Current portion of long-term debt.....	--	177
Total current liabilities.....	40,284	18,066
Long-term debt, less current portion.....	--	400
Other non-current liabilities.....	521	484
Commitments and contingencies (Note 14)		
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; 30,501,766 and 23,451,688 shares issued and outstanding.....	31	23
Capital in excess of par value.....	148,551	70,913
Accumulated deficit.....	(3,792)	(27,472)
Accumulated other comprehensive income.....	98	10
Total stockholders' equity.....	144,888	43,474
=====	=====	=====

	\$185,693	\$ 62,424
	=====	=====

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

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HARMONIC INC.

CONSOLIDATED STATEMENT OF OPERATIONS

YEAR ENDED DECEMBER 31,

1999	1998	1997
------	------	------

(IN THOUSANDS, EXCEPT SHARE DATA)

Net sales.....	\$184,075	\$ 83,857	\$74,442
Cost of sales.....	103,470	53,302	39,837
-----	-----	-----	-----
Gross profit.....	80,605	30,555	34,605
-----	-----	-----	-----
Operating expenses:			
Research and development.....	17,281	13,524	11,676
Sales and marketing.....	25,032	18,162	13,599
General and administrative.....	9,275	6,812	4,824
Acquired in-process technology.....	--	14,000	--
-----	-----	-----	-----
Total operating expenses.....	51,588	52,498	30,099
-----	-----	-----	-----
Income (loss) from operations.....	29,017	(21,943)	4,506
Interest and other income, net.....	2,556	490	682
-----	-----	-----	-----
Income (loss) before income taxes.....	31,573	(21,453)	5,188
Provision for income taxes.....	7,893	--	259
-----	-----	-----	-----
Net income (loss).....	\$ 23,680	\$(21,453)	\$ 4,929
=====	=====	=====	=====
Net income (loss) per share:			
Basic.....	\$ 0.84	\$ (0.92)	\$ 0.24
=====	=====	=====	=====
Diluted.....	\$ 0.76	\$ (0.92)	\$ 0.21
=====	=====	=====	=====
Weighted average shares:			
Basic.....	28,290	23,244	20,690
=====	=====	=====	=====
Diluted.....	30,967	23,244	23,046
=====	=====	=====	=====

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

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HARMONIC INC.

CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY

	COMMON STOCK SHARES	CAPITAL IN AMOUNT	EXCESS OF PAR VALUE	ACCUMULATED OTHER DEFICIT			STOCKHOLDERS' EQUITY	COMPREHENSIVE INCOME (LOSS)
				ACCUMULATED DEFICIT	COMPREHENSIVE INCOME	STOCKHOLDERS' EQUITY		
(IN THOUSANDS)								
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	
Issuance of Common Stock under							=====	

option and purchase plans....	506	1	1,337	--	--	1,338
Balance at December 31, 1997...	20,828	21	55,906	(6,019)	23	49,931
Net loss.....	--	--	--	(21,453)	--	(21,453)
Currency translation.....	--	--	--	--	(13)	(13)
Other comprehensive loss.....					\$ (21,466)	=====
Issuance of Common Stock under option and purchase plans....	548	--	1,614	--	--	1,614
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
Net income.....	--	--	--	23,680	--	23,680
Change in unrealized loss on investments.....	--	--	--	--	(126)	(126)
Currency translation.....	--	--	--	--	214	214
Other comprehensive income.....					\$ 23,768	=====
Tax benefit from exercise of employee stock options.....	--	--	8,244	--	--	8,244
Issuance of Common Stock in public offering, net.....	4,100	5	58,231	--	--	58,236
Issuance of Common Stock under option and purchase plans and warrant exercises.....	2,950	3	11,163	--	--	11,166
Balance at December 31, 1999...	30,502	\$31	\$148,551	\$ (3,792)	\$ 98	\$144,188
	=====	=====	=====	=====	=====	=====

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

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HARMONIC INC.

CONSOLIDATED STATEMENT OF CASH FLOWS

	YEAR ENDED DECEMBER 31,		
	1999	1998	1997
(IN THOUSANDS)			
Cash flows from operating activities:			
Net income (loss).....	\$ 23,680	\$ (21,453)	\$ 4,929
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization.....	6,278	4,283	3,441
Acquired in-process technology.....	--	14,000	--
Changes in assets and liabilities, net of effect of acquisition:			
Accounts receivable.....	(17,775)	(1,040)	(3,815)
Inventories.....	(12,905)	(6,393)	(692)
Prepaid expenses and other assets.....	(2,617)	1,697	139
Accounts payable.....	11,412	3,187	(1,896)
Accrued and other liabilities.....	13,681	3,694	(140)
Net cash provided by (used in) operating activities.....	21,754	(2,025)	1,966
Cash flows used in investing activities:			
Purchases of investments.....	(71,760)	--	--
Proceeds from maturities of investments.....	5,826	--	--
Acquisition of property and equipment.....	(9,331)	(4,384)	(4,767)
Acquisition of New Media Communication Ltd., net of cash received.....	--	(280)	--
Long-term advances.....	--	--	(1,300)
Net cash used in investing activities.....	(75,265)	(4,664)	(6,067)
Cash flows from financing activities:			
Proceeds from issuance of Common Stock.....	69,401	1,614	1,338
Borrowings under bank line and term loan.....	840	1,377	--
Repayments under bank line and term loan.....	(1,270)	(800)	--
Net cash provided by financing activities.....	68,971	2,191	1,338
Effect of exchange rate changes on cash and cash equivalents.....	184	6	23
Net increase (decrease) in cash and cash equivalents.....	15,644	(4,492)	(2,740)

Cash and cash equivalents at beginning of period.....	9,178	13,670	16,410
-----	-----	-----	-----
Cash and cash equivalents at end of period.....	\$ 24,822	\$ 9,178	\$13,670
=====	=====	=====	=====
Supplemental disclosure of cash flow information:			
Income taxes paid during the period.....	\$ 2,989	\$ 146	\$ 323
Interest paid during the period.....	\$ 60	\$ 80	\$ --

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

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HARMONIC INC.

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 in January 1998 of New Media Communication Ltd., which changed its name to Harmonic Data Systems Ltd. ("HDS"), has allowed us to develop and expand our product offerings to include high-speed data delivery software and hardware.

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, investment-grade 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.

Investments. The Company's investments are comprised of U.S. government obligations and corporate debt securities. Investments include instruments with lives ranging from three months to two years. The Company classifies its investments as available for sale in accordance with Statement of Financial Accounting Standards No. 115, "Accounting for Certain Investments in Debt and Equity Securities," and states its investments at estimated fair value, with material unrealized gains and losses reported in other comprehensive income. The specific identification method is used to determine the cost of securities disposed of, with realized gains and losses reflected in other income and expense. Investments are anticipated to be used for current operations and are, therefore, classified as current assets, even though maturities may extend beyond one year.

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. The fair values of investments are determined using quoted market prices for those securities or similar financial instruments.

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 and is adjusted periodically to reflect actual and anticipated experience.

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, 1999 and 1998 were \$5,001,000 and \$3,979,000, respectively.

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HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

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 6.

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.

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 13. 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, 1999, receivables from two customers represented 20% and 11% respectively. At December 31, 1998, receivables from three customers represented 24%, 15%, and 14%, respectively.

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, 1999, 1998, and 1997.

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, "Accounting for Income Taxes" ("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 No. 123, "Accounting for Stock-Based Compensation" ("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") which establishes accounting and reporting standards for derivative instruments and hedging activities. It requires that an entity recognize all derivatives as either assets or liabilities in the balance sheet and measure those instruments at fair value. The Company does not expect SFAS 133 to have a material impact upon the Company's consolidated financial statements.

Reclassification. Certain amounts in prior years' financial statements and related notes have been reclassified to conform to the 1999 presentation. These reclassifications are not material.

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HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

NOTE 2: PENDING BUSINESS COMBINATION

On October 27, 1999, the Company entered into an Agreement and Plan of Merger and Reorganization with C-Cube Microsystems, Inc. ("C-Cube"), pursuant to which C-Cube will merge into Harmonic (the "Merger Agreement"). Under the terms of the Merger Agreement, C-Cube will sell or spin-off to its shareholders all of the assets and liabilities of its semiconductor business prior to closing. C-Cube will then merge into Harmonic and, as a result, Harmonic will acquire C-Cube's DiviCom business. The DiviCom business designs manufactures and sells products and systems that enable companies to deliver digital video, audio and data over a variety of networks including satellite, wireless, telephone and cable. The merger will be structured as a tax-free exchange of stock and will be accounted for under the purchase method of accounting. In the merger, each share of common stock of C-Cube will be converted into the right to receive .5427 shares of Harmonic common stock. Approximately 25.7 million shares of Harmonic Common Stock will be issued and the purchase price including acquisition related costs is expected to be approximately \$1.7 billion.

Consummation of the merger is subject to a number of conditions, including Harmonic and C-Cube shareholder approval, the prior disposition of C-Cube's semiconductor business and regulatory approvals. The shareholder meetings are scheduled to be held on April 24, 2000.

Pursuant to Section 7.3 of the Merger Agreement, the Merger Agreement may be terminated by either party under certain circumstances. Each of Harmonic and C-Cube has agreed that if the merger is not consummated as a result of certain specified events, it will pay to the other party a termination fee of \$50.0 million. Payment of the fees described in this paragraph are not in lieu of damages incurred in the event of willful breach of the Merger Agreement. If the merger is not consummated, legal, accounting and financial advisory fees as well as other expenses incurred in connection with the proposed combination, in addition to the possible "break up fees" described above, could materially and adversely affect Harmonic's operating results.

NOTE 3: 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 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

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HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

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 company's weighted average cost of capital of 16%. The risk-adjusted discount rate applied to the cash flows from IPRD was 19%. The risk premium of 3% 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)	
<hr/>	
1997	
<hr/>	
(IN THOUSANDS, EXCEPT PER SHARE DATA)	
<hr/>	
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 4: CASH AND CASH EQUIVALENTS

At December 31, 1999 and 1998, 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, 1999 and 1998 and the difference between gross amortized cost and estimated fair value at December 31, 1999 and 1998 were immaterial.

	DECEMBER 31,	
	1999	1998
	(IN THOUSANDS)	
Commercial paper.....	\$ 572	\$2,154
Cash and money market accounts.....	24,250	7,024
Total cash and cash equivalents.....	\$24,822	\$9,178

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HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

NOTE 5: INVESTMENTS

The following table summarizes the Company's investments in securities (in thousands) :

DECEMBER 31, 1999	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
U.S. government debt securities.....	\$ 1,501	\$ --	\$ (7)	\$ 1,494
Corporate debt securities.....	63,543	233	(393)	63,383
Total.....	\$65,044	\$233	\$ (400)	\$64,877

At December 31, 1998, all investment securities had original maturities of three months or less at date of purchase and accordingly were classified as cash and cash equivalents.

The following table summarizes debt maturities at December 31, 1999 (in thousands) :

DECEMBER 31, 1999	AMORTIZED COST	FAIR VALUE
Less than one year.....	\$37,809	\$37,795
Due in 1 - 2 years.....	27,235	27,082
Total.....	\$65,044	\$64,877

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HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

NOTE 6: BALANCE SHEET DETAILS

DECEMBER 31,

	1999	1998
	(IN THOUSANDS)	
Accounts receivable:		
Gross accounts receivable.....	\$ 36,732	\$ 18,646
Less: allowance for doubtful accounts.....	(1,311)	(1,000)
	-----	-----
	\$ 35,421	\$ 17,646
	=====	=====
Inventories:		
Raw materials.....	\$ 10,649	\$ 3,747
Work-in-process.....	4,740	4,557
Finished goods.....	19,921	14,081
	-----	-----
	\$ 35,310	\$ 22,385
	=====	=====
Property and equipment:		
Furniture and fixtures.....	\$ 2,278	\$ 2,051
Machinery and equipment.....	27,726	19,854
Leasehold improvements.....	3,886	2,779
	-----	-----
	33,890	24,684
Less: accumulated depreciation and amortization.....	(18,959)	(13,958)
	-----	-----
	\$ 14,931	\$ 10,726
	=====	=====
Intangibles and other assets:		
Other assets.....	\$ 150	\$ 98
Goodwill.....	1,520	1,520
	-----	-----
	1,670	1,618
Less: accumulated amortization.....	(608)	(304)
	-----	-----
	\$ 1,062	\$ 1,314
	=====	=====
Accrued liabilities:		
Accrued compensation.....	\$ 10,019	\$ 3,655
Customer deposits.....	2,992	2,234
Deferred revenue.....	1,302	1,466
Accrued warranties.....	1,167	575
Other.....	3,593	2,274
	-----	-----
	\$ 19,073	\$ 10,204
	=====	=====

NOTE 7: NET INCOME (LOSS) PER SHARE

Basic net income per share is computed by dividing net income available to common stockholders (numerator) by the weighted average number of common shares outstanding (denominator) during the period. Basic net income per share excludes the dilutive effect of stock options and warrants. Diluted net income per share replaces fully diluted net income per share and gives effect to all dilutive potential common shares outstanding during a period. In computing Diluted net income per share, 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 net income per share.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

Following is a reconciliation of the numerators and denominators of the Basic and Diluted net income per share computations:

	1999	1998	1997
	-----	-----	-----

(IN THOUSANDS, EXCEPT PER SHARE DATA)

Net income (loss) (numerator).....	\$23,680	\$(21,453)	\$ 4,929
=====	=====	=====	=====
Shares calculation (denominator):			
Average shares outstanding -- basic.....	28,290	23,244	20,690
Effect of Dilutive Securities:			
Potential Common Stock relating to stock options and warrants.....	2,677	--	2,356
-----	-----	-----	-----
Average shares outstanding -- diluted.....	30,967	23,244	23,046
=====	=====	=====	=====
Net income (loss) per share -- basic.....	\$ 0.84	\$ (0.92)	\$ 0.24
=====	=====	=====	=====
Net income (loss) per share -- diluted.....	\$ 0.76	\$ (0.92)	\$ 0.21
=====	=====	=====	=====

Options and warrants to purchase 189,170, 5,888,236, and 1,028,300 shares of common stock were outstanding during 1999, 1998 and 1997, respectively, but were not included in the computation of diluted net income per share 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 \$39.75 to \$94.94 for 1999, \$0.15 to \$11.37 per share for 1998, and \$8.25 to \$11.37 per share for 1997.

NOTE 8: LINE OF CREDIT

The Company has a bank line of credit facility (the "line"), providing for borrowings of up to \$10,000,000 with a \$3,000,000 secured equipment term loan sub-limit (the "term loan"). The line contains certain financial and other covenants, with which the Company is in compliance at December 31, 1999, and is available until July 2000. Borrowings pursuant to the line bear interest at the bank's prime rate (prime rate plus 0.5% under the term loan) and are payable monthly. The Company has letters of credit issued under the line of \$0.6 million which expire at various dates throughout year 2000. There were no outstanding borrowings at December 31, 1999 and 1998 under the line.

NOTE 9: LONG-TERM DEBT

The Company had no long term debt at December 31, 1999. As of December 31, 1998 borrowings of \$577,000 were outstanding under a previous equipment term loan facility.

NOTE 10: CAPITAL STOCK

Stock Issuances. In April 1999, the Company completed a public offering of 5,600,000 shares of common stock at a price of \$15.13 per share. Of these 5,600,000 shares, 4,000,000 shares were sold by the Company and 1,600,000 shares were sold by selling stockholders. An additional 100,000 shares were sold by the Company to the underwriters to cover over-allotments. Total net proceeds to the Company were approximately \$58.3 million, after underwriter discounts and commissions and expenses. The shares sold by selling stockholders included 1,440,000 shares held by Scientific-Atlanta, Inc. Scientific-Atlanta, Inc. acquired these shares pursuant to the exercise of a warrant for which the Company received \$4.0 million upon such warrant's exercise.

Common Stock Warrants. In June 1994, the Company entered into a distribution agreement with Scientific-Atlanta, Inc., 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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

operations in the second quarter of 1994. In April 1999, the common stock warrant was exercised immediately prior to the public offering. In consideration of the acceleration of exercisability of the warrant, which was to 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, Scientific-Atlanta, Inc. agreed to reduce the number of shares

issued from 1,597,496 shares to 1,440,000 shares.

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. In February 1999, the holder elected to use the net exercise provision, resulting in the issuance of 35,476 shares of common stock and the surrender of the remaining 8,968 shares of common stock.

Stock Split. The Company completed a two-for-one stock split which was effected in the form of a stock dividend and distributed on October 14, 1999 payable to stockholders of record as of September 27, 1999. All references to share and per-share data for all periods presented have been adjusted to give effect to this two-for-one stock split.

NOTE 11: 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 initial public offering ("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 4,400,000 shares of Common Stock for issuance under the 1995 Plan. Upon the closing of the acquisition of HDS in January 1998, the 1997 Non-Statutory Option Plan (the "1997 Plan") became effective. The Company assumed all outstanding HDS 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. In 1999, the company adopted a non-statutory stock option plan (the "1999 Plan") for which 400,000 shares have been reserved for issuance. Options granted under the 1997 and 1999 Plans 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.

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HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

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, 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
Shares authorized.....	1,560	--	--

Options granted.....	(977)	977	30.76
Options exercised.....	--	(1,273)	4.80
Options canceled.....	205	(218)	9.04
	-----	-----	-----
Balance at December 31, 1999.....	1,320	3,732	\$12.48
	=====	=====	=====

The following table summarizes information regarding stock options outstanding at December 31, 1999:

RANGE OF EXERCISE PRICES	STOCK OPTIONS OUTSTANDING			STOCK OPTIONS EXERCISABLE		
	NUMBER OUTSTANDING AT DECEMBER 31, 1999	WEIGHTED-AVERAGE REMAINING CONTRACTUAL LIFE (YEARS)	WEIGHTED-AVERAGE EXERCISE PRICE	NUMBER EXERCISABLE AT DECEMBER 31, 1999	WEIGHTED-AVERAGE EXERCISE PRICE	
	(IN THOUSANDS, EXCEPT EXERCISE PRICE AND LIFE)					
\$0.15 - 5.00..	750	4.4	\$ 2.10	721	\$ 2.01	
5.47 - 6.75..	826	7.5	6.05	309	6.39	
6.88 - 8.38..	757	8.2	7.87	258	7.89	
8.44 - 25.50..	1,161	8.7	17.36	241	10.12	
26.44 - 94.94..	238	9.7	58.41	7	26.44	
	---	---	-----	-----	-----	
	3,732	7.5	\$12.48	1,536	\$ 5.26	
	=====	==	=====	=====	=====	

The weighted-average fair value of options granted in 1999 was \$30.76. The weighted-average fair value of options granted in 1998 and 1997 was \$6.79 and \$9.14, 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 Section 423 of the Internal Revenue Code. 201,826, 174,476 and 136,542 shares were issued under the Purchase Plan during 1999, 1998 and 1997, 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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

prescribed in SFAS 123, the Company's net income (loss) and net income (loss) per share would have been as follows:

	1999	1998	1997
	-----	-----	-----
	(IN THOUSANDS, EXCEPT PER SHARE DATA)		
Net income (loss):			
As reported.....	\$23,680	\$ (21,453)	\$ 4,929
Pro forma.....	17,223	(26,457)	3,209
Basic net income (loss) per share:			
As reported.....	\$ 0.84	\$ (0.92)	\$ 0.24
Pro forma.....	0.61	(1.14)	0.15
Diluted net income (loss) per share:			
As reported.....	\$ 0.76	\$ (0.92)	\$ 0.21
Pro forma.....	0.56	(1.14)	0.14

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		
	1999	1998	1997	1999	1998	1997
Dividend yield.....	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volatility.....	90%	65%	55%	90%	65%	55%
Risk-free interest rate.....	4.7% - 6.7%	4.4% - 5.6%	5.6% - 6.7%	4.6% - 6.4%	4.6% - 5.5%	5.1% - 6.3%
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. The Company makes 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 12: INCOME TAXES

The provision for income taxes consists of the following:

	DECEMBER 31,		
	1999	1998	1997
(IN THOUSANDS)			
Current:			
Federal.....	\$11,611	\$--	\$168
Foreign.....	351	--	90
State.....	1,409	--	1
	-----	---	---
	13,371	--	259
Deferred:			
Federal.....	(4,143)	--	--
Foreign.....	--	--	--
State.....	(1,335)	--	--
	-----	---	---
	(5,478)	--	--
	-----	---	---
	\$ 7,893	\$--	\$259
	=====	====	=====

HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

The Company's (benefit) provision for income taxes differed from the amount computed by applying the statutory U.S. federal income tax rate to income (loss) before income taxes as follows:

	DECEMBER 31,		
	1999	1998	1997
(IN THOUSANDS)			
Provision at statutory rate.....	\$11,051	\$ (7,294)	\$ 1,764
Differential (benefit) in rates on foreign earnings...	(20)	774	(111)
State taxes, net of federal benefit.....	48	--	1
Foreign sales corporation benefit.....	(307)	--	(176)

Acquired in-process technology and non-deductible goodwill.....	106	4,863	--
Utilization of net operating loss carryovers.....	(597)	--	(1,661)
Utilization of research credits.....	(548)	--	--
Future benefits not currently recognized.....	508	2,116	364
Realized deferred tax assets previously reserved.....	(3,249)	--	--
Alternative minimum tax.....	--	--	51
Others, net.....	901	(459)	27
	-----	-----	-----
	\$ 7,893	\$ --	\$ 259
	=====	=====	=====

Deferred tax assets (liabilities) comprise the following:

	DECEMBER 31,		
	1999	1998	1997
(IN THOUSANDS)			
Net operating loss carryovers.....	\$ --	\$ 845	\$ 303
Research and development credit carryovers.....	--	3,285	2,452
Capitalized research and development costs.....	283	71	234
Reserves not currently deductible.....	4,863	2,814	1,657
Other.....	332	419	96
	-----	-----	-----
Total deferred tax assets.....	5,478	7,434	4,742
Valuation allowance.....	--	(7,434)	(4,742)
	-----	-----	-----
Net deferred tax assets.....	\$ 5,478	\$ --	\$ --
	=====	=====	=====

The valuation allowance at December 31, 1998 and 1997 was attributed to deferred tax assets. Management believed that sufficient uncertainty existed regarding the realizability of these items such that a full valuation allowance was recorded.

The Company's income taxes payable for federal, state, and foreign purposes have been reduced by the tax benefits of disqualifying dispositions of stock options. The Company receives an income tax benefit for compensation expense for tax purposes which is calculated as the difference between the market value of the stock issued at the time of exercise and the option price at the applicable income tax rates. This benefit is recorded as an increase in capital in excess of par value.

NOTE 13: 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 Harmonic Data Systems Ltd. subsidiary and a research and development facility in Israel.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

The following table summarizes net sales and property and equipment information for geographic areas (in thousands):

	YEAR ENDED DECEMBER 31,		
	1999	1998	1997

Net sales:			
United States.....	\$129,028	\$47,422	\$30,651

Canada.....	12,969	7,208	12,806
China.....	8,552	11,647	8,254
Other foreign countries.....	33,526	17,580	22,731
 Total.....	 \$184,075	 =====	 \$74,442

Property, equipment and intangibles:			
United States.....	\$ 14,014	\$10,384	\$ 8,617
Israel.....	1,759	1,501	1,373
Other foreign countries.....	70	57	87
 Total.....	 \$ 15,843	 =====	 \$11,942

The Company sells to a significant number of its end users through distributors. In 1999 sales to one domestic customer represented 41% of total net sales. 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 1999, 1998 and 1997, sales of optical transmitters accounted for approximately 63%, 54%, and 63%, respectively of net sales and sales of optical node receivers, return path and network management products accounted for approximately 32%, 35%, and 37%, respectively, of net sales. In 1999 and 1998, TRANsend and CyberStream digital products accounted for 5%, and 11% of net sales. There were no significant sales of digital products in 1997.

NOTE 14: COMMITMENTS AND CONTINGENCIES

Commitments -- Facilities Leases. The Company leases its facilities under noncancelable operating leases which expire at various dates through 2010. Total rent expense related to these operating leases was \$1,647,000, \$1,602,000, and \$1,413,000, for 1999, 1998 and 1997, respectively. Future minimum lease payments under noncancelable operating leases at December 31, 1999, were as follows: (in thousands)

2000.....	\$1,513
2001.....	1,415
2002.....	1,324
2003.....	1,352
2004.....	1,392
Thereafter.....	2,456
 -----	 -----
	\$9,452
	=====

Commitments -- Royalties. The Company has obtained research and development grants under various Israeli government programs that require the payment of royalties on sales of certain products resulting from such research. During 1999 and 1998 royalty expenses were not material to consolidated operations or financial position.

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.

PART III

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

NAME	AGE	PRINCIPAL OCCUPATION
-----	---	-----
Anthony J. Ley.....	61	Chairman of the Board of Directors, President and Chief Executive Officer, Harmonic Inc.
Moshe Nazarathy.....	48	Senior Vice President, General Manager Israel R&D Center, Harmonic Inc.
E. Floyd Kvamme.....	62	General Partner, Kleiner Perkins Caufield & Byers
David A. Lane.....	41	General Partner, Alpine Technology Ventures
Barry D. Lemieux.....	60	Retired; former President of American Cablesystems Corporation
Michel L. Vaillaud.....	68	Retired; former Chairman and CEO of Schlumberger, Limited

Each incumbent director has been engaged in the principal occupation set forth above during the past five years. There are no family relationships between any directors or executive officers of the Company.

Anthony J. Ley has served as the Company'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 the Company, has served as Senior Vice President, General Manager of Israel R&D Center, since December 1993, as a director of the Company since the Company's inception and served as Vice President, Research, from the Company'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 Stanford 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 12 patents.

E. Floyd Kvamme has been a director of the Company since January 1990. Since 1984, Mr. Kvamme has been a general partner of Kleiner Perkins Caufield & Byers, a venture capital firm. Mr. Kvamme is also a director of Brio Technology, Inc., GemFire, Photon Dynamics, Inc., Power Integrations, Inc., and Silicon Genesis. Mr. Kvamme holds a B.S.E.E. from the University of California, Berkeley and an M.S.E.E. from Syracuse University.

David A. Lane has been a director of the Company since June 1992. Since December 1994, Mr. Lane has been a general partner and co-founder of Alpine Technology Ventures, a venture capital firm. From August 1987 to December 1994, he was a Vice President at the Harvard Private Capital Group, the investment affiliate through which the Harvard Management Company makes private and direct investments. Mr. Lane is also a director of several private companies. Mr. Lane holds a B.S.E.E. from the University of Southern California and an M.B.A. from Harvard University.

Barry D. Lemieux has been a director of the Company since January 1996. Now retired, from 1978 to 1988 Mr. Lemieux was with American Cablesystems Corporation, most recently as President and Chief Operating Officer. In addition to marketing and general management positions with the New York Telephone Company and Continental Cablevision, Mr. Lemieux has served on numerous cable television industry

committees, is a former director of the Cable Advertising Bureau (CAB) and past Chairman of the Cable Television Administration and Marketing Society (CTAM). Mr. Lemieux holds a B.A. in history from Hofstra University and an M.A.T. from Harvard University.

Michel L. Vaillaud has been a director of the Company since March 1997. Now retired, from 1973 to 1986 Mr. Vaillaud was with Schlumberger, Limited, most recently as Chairman and Chief Executive Officer. He is a graduate of Ecole Polytechnique in Paris and Ecole Nationale Supérieure des Mines in Paris. He serves as a Trustee of the Institute of Advanced Studies in Princeton, New Jersey.

(c) Section 16(a) -- Beneficial Ownership Reporting Compliance.

Based solely on its review of copies of filings under Section 16(a) of the Exchange Act received by it, or written representations from certain reporting persons, the Company believes that during fiscal 1999 all Section 16 filings requirements were met.

ITEM 11. EXECUTIVE COMPENSATION

The following Summary Compensation Table sets forth certain information regarding the compensation of the Chief Executive Officer of the Company and the other four most highly compensated executive officers of the Company whose salary plus bonus exceeded \$100,000 in the last fiscal year (collectively, the "Named Executive Officers") for services rendered in all capacities to the Company during the fiscal years ended December 31, 1997, December 31, 1998 and December 31, 1999.

SUMMARY COMPENSATION TABLE

NAME AND PRINCIPAL POSITION	YEAR	ANNUAL COMPENSATION(1)		LONG TERM COMPENSATION	
		SALARY	BONUS	SECURITIES UNDERLYING OPTIONS	
		-----	-----	-----	-----
Anthony J. Ley.....	1999	\$325,000	\$641,069	50,000	
Chairman of the Board, President &	1998	300,000	50,000	80,000	
Chief Executive Officer	1997	275,000	--	50,000	
Moshe Nazarathy.....	1999	189,883	374,779	20,000	
Senior Vice President, General Manager of	1998	168,242	25,000	24,000	
Israel R&D Center	1997	157,909	--	26,000	
Michael Yost.....	1999	190,000	374,779	24,000	
Vice President, Operations	1998	175,000	25,000	24,000	26,000
	1997	160,000	--		
Israel Levi.....	1999	185,000	384,916	20,000	
Vice President, Research & Development	1998	170,000	25,000	24,000	
	1997	155,000	--	26,000	
Robin N. Dickson.....	1999	183,596	374,781	24,000	
Chief Financial Officer	1998	160,000	25,000	24,000	
	1997	145,000	--	26,000	

(1) Other than compensation described above, the Company did not pay any Named Executive Officer any compensation, including incidental personal benefits, in excess of 10% of such executive officer's salary.

OPTION GRANTS IN FISCAL 1999

NAME	INDIVIDUAL GRANTS				POTENTIAL REALIZABLE VALUE	
	NUMBER OF SECURITIES UNDERLYING OPTIONS GRANTED(1)	PERCENT OF TOTAL OPTIONS GRANTED TO EMPLOYEES IN FISCAL YEAR	EXERCISE OR BASE PRICE	EXPIRATION DATE	AT ASSUMED ANNUAL RATES OF STOCK PRICE APPRECIATION FOR OPTION TERM(2)	
					5%	10%
Anthony J. Ley.....	50,000	5.1%	\$25.50	6/22/2009	\$801,841	\$2,032,022
Moshe Nazarathy.....	20,000	2.0%	25.50	6/22/2009	320,736	812,809
Michael Yost.....	24,000	2.5%	25.50	6/22/2009	384,884	975,370
Robin N. Dickson.....	24,000	2.5%	25.50	6/22/2009	384,884	975,370
Israel Levi.....	20,000	2.0%	25.50	6/22/2009	320,736	812,809

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- (1) The options were granted pursuant to the Company's 1995 Stock Plan, and become exercisable at a rate of 1/4 of the shares subject to the option one year after the date of grant and an additional 1/48 of the shares at the end of each month thereafter, subject to continued service as an employee. The term of each option is ten years.
 - (2) Potential gains are net of the exercise price but before taxes associated with the exercise. The 5% and 10% assumed annual rates of compounded stock appreciation are mandated by the rules of the Securities and Exchange Commission and do not represent the Company's estimate or projection of the future Common Stock price. Actual gains, if any, on stock option exercises will depend on the future financial performance of the Company, overall market conditions and the option holders' continued employment through the vesting period.

AGGREGATE OPTION EXERCISES IN FISCAL 1999 AND YEAR-END VALUES

The following table provides information with respect to the exercise of stock options during 1999 and the value of stock options held as of December 31, 1999 by each of the Named Executive Officers under the 1988 Stock Option Plan and the 1995 Stock Plan.

NAME	SHARES ACQUIRED ON EXERCISE	VALUE REALIZED ⁽¹⁾	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS AT 12/31/99		VALUE OF UNEXERCISED IN-THE-MONEY OPTIONS AT 12/31/99 ⁽²⁾	
			EXERCISABLE	UNEXERCISABLE	EXERCISABLE	UNEXERCISABLE
Anthony J. Ley.....	60,000	\$898,500	422,496	120,834	\$38,641,505	\$9,594,264
Moshe Nazarathy.....	--	--	131,540	45,792	11,768,812	3,610,271
Michael Yost.....	20,000	220,750	62,130	49,770	5,549,842	3,886,039
Robin N. Dickson.....	20,000	722,000	106,012	49,718	9,699,436	3,881,357
Israel Levi.....	--	--	58,846	46,960	5,174,622	3,707,929

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- (1) Value realized represents the difference between the exercise price of the options and the fair market value of the underlying securities on the date of exercise.
 - (2) Calculated by determining the difference between the fair market value of the Common Stock as of December 31, 1999 and the exercise price of the underlying options.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information known to the Company with respect to beneficial ownership of the Company's Common Stock as of February 25, 2000 by (i) each beneficial owner of more than 5% of the Company's Common Stock, (ii) each director, (iii) each Named Executive Officer and (iv) all directors and executive officers as a group. Except as otherwise indicated, each person has sole voting and investment power with respect to all shares shown as beneficially owned, subject to community property laws where applicable.

NAME AND ADDRESS OF BENEFICIAL OWNER	NUMBER OF SHARES	PERCENT OF TOTAL
AMVESCAP PLC ⁽¹⁾ 11 Devonshire Square London, England EC2M	2,347,800	7.6%
FMR Corp. ⁽¹⁾ 82 Devonshire Street Boston, MA	2,359,000	7.7%
Morgan Stanley Dean Witter ⁽¹⁾ 1585 Broadway New York, NY 10036	1,953,547	6.4%

Oppenheimer Funds, Inc.(1).....	1,598,900	5.2%
Two World Trade Center, 34th Floor New York, NY 10048		
Anthony J. Ley(2).....	692,526	2.2%
Moshe Nazarathy(3).....	352,925	1.1%
E. Floyd Kvamme.....	328,684	1.1%
David A. Lane(4).....	31,666	*
Barry Lemieux(5).....	53,666	*
Michel L. Vaillaud(6).....	31,666	*
Michael Yost(7).....	66,776	*
Robin N. Dickson(8).....	150,817	*
Israel Levi(9).....	75,187	*
All directors and executive officers as a group (9 persons)(10).....	1,783,913	5.6%

* Percentage of shares beneficially owned is less than one percent of total.

- (1) Based solely on a review of Schedule 13D, 13F and 13G filings with the Securities and Exchange Commission.
- (2) Includes 434,371 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.
- (3) Includes 136,207 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.
- (4) Includes 19,666 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.
- (5) Includes 15,666 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.
- (6) Includes 11,666 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.
- (7) Includes 66,774 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.
- (8) Includes 110,605 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.
- (9) Includes 64,096 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.

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- (10) Includes 859,051 shares which may be acquired upon exercise of options exercisable within 60 days of February 25, 2000.

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 28 of this Report:
- (a) (2) Exhibits. The documents listed on the Exhibit Index of this Report are filed herewith. 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.

Form 8-K filed on November 1, 1999.

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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 to be signed on its behalf by the undersigned, hereunto duly authorized, in the City of Sunnyvale, State of California, on March 30, 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)	March 30, 2000
/s/ ROBIN N. DICKSON ----- (Robin N. Dickson)	Chief Financial Officer (Principal Financial and Accounting Officer)	March 30, 2000
/s/ BARRY LEMIEUX* ----- (Barry Lemieux)	Director	March 30, 2000
/s/ E. FLOYD KVAMME* ----- (E. Floyd Kvamme)	Director	March 30, 2000
/s/ DAVID A. LANE* ----- (David A. Lane)	Director	March 30, 2000
/s/ MOSHE NAZARATHY* ----- (Moshe Nazarathy)	Director	March 30, 2000
/s/ MICHEL L. VAILLAUD* ----- (Michel L. Vaillaud)	Director	March 30, 2000

*By: /s/ ROBIN N. DICKSON

(Robin N. Dickson)
Attorney-In-Fact

EXHIBIT INDEX

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

2.1(ix)	Agreement and Plan of Merger and Reorganization by and among C-Cube Microsystems, Inc. and Harmonic Inc. dated October 27, 1999.
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(viii)	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.
10.24	1999 Nonstatutory Stock Option Plan.

EXHIBIT
NUMBER

10.25	Amendment to Second Amended and Restated Loan and Security Agreement dated March 5, 1999, as amended June 10, 1999 and March 24, 2000, between Registrant and Silicon Valley Bank.
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.
 - (viii) Previously filed as an Exhibit to the Company's 10-K for the year ended December 31, 1999 and as amended on April 7, 1999, February 23, 2000 and March 10, 2000.
 - (ix) Previously filed as an Exhibit to the Company's Report on Form 8-K dated November 1, 1999.
- + Management Contract or Compensatory Plan or Arrangement required to be filed as an exhibit to this report on Form 10-K.

HARMONIC INC.
1999 NONSTATUTORY STOCK OPTION PLAN

1. Purposes of the Plan. The purposes of this Nonstatutory Stock Option Plan are:

- to attract and retain the best available personnel for positions of substantial responsibility,
- to provide additional incentive to Employees and Consultants, and
- to promote the success of the Company's business.

Options granted under the Plan will be Nonstatutory Stock Options.

2. Definitions. As used herein, the following definitions shall apply:

(a) "Administrator" means the Board or any of its Committees as shall be administering the Plan, in accordance with Section 4 of the Plan.

(b) "Applicable Laws" means the requirements relating to the administration of stock option plans under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any foreign country or jurisdiction where Options are, or will be, granted under the Plan.

(c) "Board" means the Board of Directors of the Company.

(d) "Code" means the Internal Revenue Code of 1986, as amended.

(e) "Committee" means a committee of Directors appointed by the Board in accordance with Section 4 of the Plan.

(f) "Common Stock" means the Common Stock of the Company.

(g) "Company" means Harmonic Inc., a Delaware corporation.

(h) "Consultant" means any person, including an advisor, engaged by the Company or a Parent or Subsidiary to render services to such entity.

(i) "Director" means a member of the Board.

(j) "Disability" means total and permanent disability as defined in Section 22(e)(3) of the Code.

(k) "Employee" means any person, including Officers, employed by the Company or any Parent or Subsidiary of the Company. A Service Provider shall not cease to be an Employee

in the case of (i) any leave of absence approved by the Company or (ii) transfers between locations of the Company or between the Company, its Parent, any Subsidiary, or any successor. Neither service as a Director nor payment of a director's fee by the Company shall be sufficient to constitute "employment" by the Company.

(l) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(m) "Fair Market Value" means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock

exchange or a national market system, including without limitation the Nasdaq National Market or The Nasdaq SmallCap Market of The Nasdaq Stock Market, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system for the last market trading day prior to the time of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, the Fair Market Value of a Share of Common Stock shall be the mean between the high bid and low asked prices for the Common Stock on the last market trading day prior to the day of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable;

(iii) In the absence of an established market for the Common Stock, the Fair Market Value shall be determined in good faith by the Administrator.

(n) "Notice of Grant" means a written or electronic notice evidencing certain terms and conditions of an individual Option grant. The Notice of Grant is part of the Option Agreement.

(o) "Officer" means a person who is an officer of the Company within the meaning of Nasdaq guidelines, including all employees with the corporate rank of vice-president or higher, and employees with lesser rank but comparable authority.

(p) "Option" means a nonstatutory stock option granted pursuant to the Plan, that is not intended to qualify as an incentive stock option within the meaning of Section 422 of the Code and the regulations promulgated thereunder.

(q) "Option Agreement" means an agreement between the Company and an Optionee evidencing the terms and conditions of an individual Option grant. The Option Agreement is subject to the terms and conditions of the Plan.

(r) "Optioned Stock" means the Common Stock subject to an Option.

(s) "Optionee" means the holder of an outstanding Option granted under the Plan.

(t) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(u) "Plan" means this 1999 Nonstatutory Stock Option Plan.

(v) "Service Provider" means an Employee including an Officer or Consultant.

(w) "Share" means a share of the Common Stock, as adjusted in accordance with Section 12 of the Plan.

(x) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code.

3. Stock Subject to the Plan. Subject to the provisions of Section 12 of the Plan, the maximum aggregate number of Shares which may be optioned and sold under the Plan is 400,000 Shares. The Shares may be authorized, but unissued, or reacquired Common Stock.

If an Option expires or becomes unexercisable without having been exercised in full, or is surrendered pursuant to an Option Exchange Program, the unpurchased Shares which were subject thereto shall become available for future grant or sale under the Plan (unless the Plan has terminated).

4. Administration of the Plan.

(a) Administration. The Plan shall be administered by (i) the Board or (ii) a Committee, which committee shall be constituted to satisfy Applicable Laws.

(b) Powers of the Administrator. Subject to the provisions of the Plan, and in the case of a Committee, subject to the specific duties delegated by the Board to such Committee, the Administrator shall have the authority, in its discretion:

(i) to determine the Fair Market Value of the Common Stock;

(ii) to select the Service Providers to whom Options may be granted hereunder;

(iii) to determine whether and to what extent Options are granted hereunder;

(iv) to determine the number of shares of Common Stock to be covered by each Option granted hereunder;

(v) to approve forms of agreement for use under the Plan;

(vi) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any award granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the time or times when Options may be exercised (which may be based on

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performance criteria), any vesting acceleration or waiver of forfeiture restrictions, and any restriction or limitation regarding any Option or the shares of Common Stock relating thereto, based in each case on such factors as the Administrator, in its sole discretion, shall determine;

(vii) to construe and interpret the terms of the Plan and awards granted pursuant to the Plan;

(viii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of qualifying for preferred tax treatment under foreign tax laws;

(ix) to modify or amend each Option (subject to Section 14(b) of the Plan), including the discretionary authority to extend the post-termination exercisability period of Options longer than is otherwise provided for in the Plan;

(x) to authorize any person to execute on behalf of the Company any instrument required to effect the grant of an Option previously granted by the Administrator;

(xi) to determine the terms and restrictions applicable to Options;

(xii) to allow Optionees to satisfy withholding tax obligations by electing to have the Company withhold from the Shares to be issued upon exercise of an Option that number of Shares having a Fair Market Value equal to the amount required to be withheld. The Fair Market Value of the Shares to be withheld shall be determined on the date that the amount of tax to be withheld is to be determined. All elections by an Optionee to have Shares withheld for this purpose shall be made in such form and under such conditions as the Administrator may deem necessary or advisable; and

(xiii) to make all other determinations deemed necessary or advisable for administering the Plan.

(c) Effect of Administrator's Decision. The Administrator's decisions, determinations and interpretations shall be final and binding on all Optionees and any other holders of Options.

5. Eligibility. Options may be granted to Service Providers; provided, however, that notwithstanding anything to the contrary contained in the Plan, Options may not be granted to Officers and Directors.

6. Limitation. Neither the Plan nor any Option shall confer upon an Optionee any right with respect to continuing the Optionee's relationship as a Service Provider with the Company, nor shall they interfere in any way with the Optionee's right or the Company's right to terminate such relationship at any time, with or without cause.

7. Term of Plan. The Plan shall become effective upon its adoption by the Board. It shall continue in effect for ten (10) years, unless sooner terminated under Section 14 of the Plan.

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8. Term of Option. The term of each Option shall be stated in the Option Agreement.

9. Option Exercise Price and Consideration.

(a) Exercise Price. The per share exercise price for the Shares to be issued pursuant to exercise of an Option shall be determined by the Administrator.

(b) Waiting Period and Exercise Dates. At the time an Option is granted, the Administrator shall fix the period within which the Option may be exercised and shall determine any conditions which must be satisfied before the Option may be exercised.

(c) Form of Consideration. The Administrator shall determine the acceptable form of consideration for exercising an Option, including the method of payment. Such consideration may consist entirely of:

(i) cash;

(ii) check;

(iii) promissory note;

(iv) other Shares which (A) in the case of Shares acquired upon exercise of an option, have been owned by the Optionee for more than six months on the date of surrender, and (B) have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which said Option shall be exercised;

(v) consideration received by the Company under a cashless exercise program implemented by the Company in connection with the Plan;

(vi) a reduction in the amount of any Company liability to the Optionee, including any liability attributable to the Optionee's participation in any Company-sponsored deferred compensation program or arrangement;

(vii) such other consideration and method of payment for the issuance of Shares to the extent permitted by Applicable Laws; or

(viii) any combination of the foregoing methods of payment.

10. Exercise of Option.

(a) Procedure for Exercise; Rights as a Shareholder. Any Option granted hereunder shall be exercisable according to the terms of the Plan and at such times and under such conditions as determined by the Administrator and set forth in the Option Agreement. An Option may not be exercised for a fraction of a Share.

An Option shall be deemed exercised when the Company receives:

(i) written or electronic notice of exercise (in accordance with the Option Agreement) from the person entitled to

exercise the Option, and (ii) full payment for the Shares with respect to which the Option is exercised. Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Option Agreement and the Plan. Shares issued upon exercise of an Option shall be issued in the name of the Optionee or, if requested by the Optionee, in the name of the Optionee and his or her spouse. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a shareholder shall exist with respect to the Optioned Stock, notwithstanding the exercise of the Option. The Company shall issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 12 of the Plan.

Exercising an Option in any manner shall decrease the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

(b) Termination of Relationship as a Service Provider. If an Optionee ceases to be a Service Provider, other than upon the Optionee's death or Disability, the Optionee may exercise his or her Option, but only within such period of time as is specified in the Option Agreement, and only to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Option Agreement). In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for thirty (30) days following the Optionee's termination. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If, after termination, the Optionee does not exercise his or her Option within the time specified by the Administrator, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(c) Disability of Optionee. If an Optionee ceases to be a Service Provider as a result of the Optionee's Disability, the Optionee may exercise his or her Option within such period of time as is specified in the Option Agreement, to the extent the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Option Agreement). In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for twelve (12) months following the Optionee's termination. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If, after termination, the Optionee does not exercise his or her Option within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(d) Death of Optionee. If an Optionee dies while a Service Provider, the Option may be exercised within such period of time as is specified in the Option Agreement (but in no event later than the expiration of the term of such Option as set forth in the Notice of Grant), by the Optionee's estate or by a person who acquires the right to exercise the Option by bequest or inheritance, but only to the extent that the Option is vested on the date of death. In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for twelve (12) months following the Optionee's termination. If, at the time of death, the Optionee is not vested as to his or

her entire Option, the Shares covered by the unvested portion of the Option shall immediately revert to the Plan. The Option may be exercised by the

executor or administrator of the Optionee's estate or, if none, by the person(s) entitled to exercise the Option under the Optionee's will or the laws of descent or distribution. If the Option is not so exercised within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(e) Buyout Provisions. The Administrator may at any time offer to buy out for a payment in cash or Shares, an Option previously granted based on such terms and conditions as the Administrator shall establish and communicate to the Optionee at the time that such offer is made.

11. Non-Transferability of Options. Unless determined otherwise by the Administrator, an Option may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Optionee, only by the Optionee. If the Administrator makes an Option transferable, such Option shall contain such additional terms and conditions as the Administrator deems appropriate.

12. Adjustments Upon Changes in Capitalization, Dissolution, Merger or Asset Sale.

(a) Changes in Capitalization. Subject to any required action by the shareholders of the Company, the number of shares of Common Stock covered by each outstanding Option, and the number of shares of Common Stock which have been authorized for issuance under the Plan but as to which no Options have yet been granted or which have been returned to the Plan upon cancellation or expiration of an Option, as well as the price per share of Common Stock covered by each such outstanding Option, shall be proportionately adjusted for any increase or decrease in the number of issued shares of Common Stock resulting from a stock split, reverse stock split, stock dividend, combination or reclassification of the Common Stock, or any other increase or decrease in the number of issued shares of Common Stock effected without receipt of consideration by the Company; provided, however, that conversion of any convertible securities of the Company shall not be deemed to have been "effected without receipt of consideration." Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of shares of Common Stock subject to an Option.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, the Administrator shall notify each Optionee as soon as practicable prior to the effective date of such proposed transaction. The Administrator in its discretion may provide for an Optionee to have the right to exercise his or her Option until ten (10) days prior to such transaction as to all of the Optioned Stock covered thereby, including Shares as to which the Option would not otherwise be exercisable. In addition, the Administrator may provide that any Company repurchase option applicable to any Shares purchased upon exercise of an Option shall lapse as to all such Shares, provided the proposed dissolution or liquidation takes place at the time and in the manner contemplated. To the extent it has not been previously exercised, an Option will terminate immediately prior to the consummation of such proposed action.

(c) Merger or Asset Sale. In the event of a merger of the Company with or into another corporation, or the sale of substantially all of the assets of the Company, each outstanding Option shall be assumed or an equivalent option or right substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the Option, the Optionee shall fully vest in and have the right to exercise the Option as to all of the Optioned Stock, including Shares as to which it would not otherwise be vested or exercisable. If an Option becomes fully vested and exercisable in lieu of assumption or substitution in the event of a merger or sale of assets, the Administrator shall notify the Optionee in writing or electronically that the Option shall be fully vested and exercisable for a period of fifteen (15) days from the date of such notice, and

the Option shall terminate upon the expiration of such period. For the purposes of this paragraph, the Option shall be considered assumed if, following the merger or sale of assets, the option or right confers the right to purchase or receive, for each Share of Optioned Stock, immediately prior to the merger or sale of assets, the consideration (whether stock, cash, or other securities or property) received in the merger or sale of assets by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the merger or sale of assets is not solely common stock of the successor corporation or its Parent, the Administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of the Option, for each Share of Optioned Stock to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the merger or sale of assets.

13. Date of Grant. The date of grant of an Option shall be, for all purposes, the date on which the Administrator makes the determination granting such Option, or such other later date as is determined by the Administrator. Notice of the determination shall be provided to each Optionee within a reasonable time after the date of such grant.

14. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Board may at any time amend, alter, suspend or terminate the Plan.

(b) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan shall impair the rights of any Optionee, unless mutually agreed otherwise between the Optionee and the Administrator, which agreement must be in writing and signed by the Optionee and the Company. Termination of the Plan shall not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to options granted under the Plan prior to the date of such termination.

15. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares shall not be issued pursuant to the exercise of an Option unless the exercise of such Option and the issuance and delivery of such Shares shall comply with Applicable Laws and shall be further subject to the approval of counsel for the Company with respect to such compliance.

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(b) Investment Representations. As a condition to the exercise of an Option the Company may require the person exercising such Option to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

16. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

17. Reservation of Shares. The Company, during the term of this Plan, will at all times reserve and keep available such number of Shares as shall be sufficient to satisfy the requirements of the Plan.

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HARMONIC INC.
1999 NONSTATUTORY STOCK OPTION PLAN

STOCK OPTION AGREEMENT

Unless otherwise defined herein, the terms defined in the Plan shall have the same defined meanings in this Option Agreement.

I. NOTICE OF STOCK OPTION GRANT

[OPTIONEE'S NAME AND ADDRESS]

You have been granted an option to purchase Common Stock of the Company, subject to the terms and conditions of the Plan and this Option Agreement, as follows:

Grant Number _____

Date of Grant _____

Vesting Commencement Date _____

Exercise Price per Share \$ _____

Total Number of Shares Granted _____

Total Exercise Price \$ _____

Type of Option: Nonstatutory Stock Option

Term/Expiration Date: _____

Vesting Schedule:

Subject to the Optionee continuing to be a Service Provider on such dates, this Option shall vest and become exercisable in accordance with the following schedule:

25% of the Shares subject to the Option shall vest twelve months after the Vesting Commencement Date, and 1/48 of the Shares subject to the Option shall vest each month thereafter.

Termination Period:

This Option may be exercised for thirty (30) days after Optionee ceases to be a Service Provider. Upon the death or Disability of the Optionee, this Option may be exercised for such longer period as provided in the Plan. In no event shall this Option be exercised later than the Term/Expiration Date as provided above.

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II. AGREEMENT

1. Grant of Option. The Plan Administrator of the Company hereby grants to the Optionee named in the Notice of Grant attached as Part I of this Agreement (the "Optionee") an option (the "Option") to purchase the number of Shares, as set forth in the Notice of Grant, at the exercise price per share set forth in the Notice of Grant (the "Exercise Price"), subject to the terms and conditions of the Plan, which is incorporated herein by reference. Subject to Section 14(b) of the Plan, in the event of a conflict between the terms and conditions of the Plan and the terms and conditions of this Option Agreement, the terms and conditions of the Plan shall prevail.

2. Exercise of Option.

(a) Right to Exercise. This Option is exercisable during its term in accordance with the Vesting Schedule set out in the Notice of Grant and the applicable provisions of the Plan and this Option Agreement.

(b) Method of Exercise. This Option is exercisable by delivery of an exercise notice, in the form attached as Exhibit A (the "Exercise Notice"), which shall state the election to exercise the Option, the number of Shares in respect of which the Option is being exercised (the "Exercised Shares"), and such other representations and agreements as may be required by the Company pursuant to the provisions of the Plan. The Exercise Notice shall be completed by the Optionee and delivered to Stock Option Administrator. The Exercise Notice shall be accompanied by payment of the aggregate Exercise Price as to all Exercised Shares. This Option shall be deemed to be exercised upon receipt by the Company of such fully executed Exercise Notice accompanied by such aggregate Exercise Price.

No Shares shall be issued pursuant to the exercise of this Option unless such issuance and exercise complies with Applicable Laws. Assuming such compliance, for income tax purposes the Exercised Shares shall be considered transferred to the Optionee on the date the Option is exercised with respect to such Exercised Shares.

3. Method of Payment. Payment of the aggregate Exercise Price shall be by any of the following, or a combination thereof, at the election of the Optionee:

(a) cash;

(b) check;

(c) consideration received by the Company under a cashless exercise program implemented by the Company in connection with the Plan; or

(d) surrender of other Shares which (i) in the case of Shares acquired upon exercise of an option, have been owned by the Optionee for more than six (6) months on the date of surrender, AND (ii) have a Fair Market Value on the date of surrender equal to the aggregate Exercise Price of the Exercised Shares.

4. Non-Transferability of Option. This Option may not be transferred in any manner otherwise than by will or by the laws of descent or distribution and may be exercised during the lifetime of Optionee only by the Optionee. The terms of the Plan and this Option Agreement shall be binding upon the executors, administrators, heirs, successors and assigns of the Optionee.

5. Term of Option. This Option may be exercised only within the term set out in the Notice of Grant, and may be exercised during such term only in accordance with the Plan and the terms of this Option Agreement.

6. Tax Consequences. Some of the federal tax consequences relating to this Option, as of the date of this Option, are set forth below. THIS SUMMARY IS NECESSARILY INCOMPLETE, AND THE TAX LAWS AND REGULATIONS ARE SUBJECT TO CHANGE. THE OPTIONEE SHOULD CONSULT A TAX ADVISER BEFORE EXERCISING THIS OPTION OR DISPOSING OF THE SHARES.

(a) Exercising the Option. The Optionee may incur regular federal income tax liability upon exercise of an NSO. The Optionee will be treated as having received compensation income (taxable at ordinary income tax rates) equal to the excess, if any, of the Fair Market Value of the Exercised Shares on the date of exercise over their aggregate Exercise Price. If the Optionee is an Employee or a former Employee, the Company will be required to withhold from his or her compensation or collect from Optionee and pay to the applicable taxing authorities an amount in cash equal to a percentage of this compensation income at the time of exercise, and may refuse to honor the exercise and refuse to deliver Shares if such withholding amounts are not delivered at the time of exercise.

(b) Disposition of Shares. If the Optionee holds NSO Shares for at least one year, any gain realized on disposition of the Shares will be treated as long-term capital gain for federal income tax purposes.

7. Entire Agreement; Governing Law. The Plan is incorporated herein by

reference. The Plan and this Option Agreement constitute the entire agreement of the parties with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements of the Company and Optionee with respect to the subject matter hereof, and may not be modified adversely to the Optionee's interest except by means of a writing signed by the Company and Optionee. This agreement is governed by the internal substantive laws, but not the choice of law rules, of California.

8. No guarantee of continued service. Optionee acknowledges and agrees that the vesting of shares pursuant to the vesting schedule hereof is earned only by continuing as a service provider at the will of the company (and not through the act of being hired, being granted an option or purchasing shares hereunder). Optionee further acknowledges and agrees that this agreement, the transactions contemplated hereunder and the vesting schedule set forth herein do not constitute an express or implied promise of continued engagement as a service provider for the vesting period, for any period, or at all, and shall not interfere with optionee's right or the company's right to terminate optionee's relationship as a service provider at any time, with or without cause.

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By your signature and the signature of the Company's representative below, you and the Company agree that this Option is granted under and governed by the terms and conditions of the Plan and this Option Agreement. Optionee has reviewed the Plan and this Option Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Option Agreement and fully understands all provisions of the Plan and Option Agreement. Optionee hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Administrator upon any questions relating to the Plan and Option Agreement. Optionee further agrees to notify the Company upon any change in the residence address indicated below.

OPTIONEE

HARMONIC INC.

Signature

By

Print Name

Title

Residence Address

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EXHIBIT A

HARMONIC INC.

1999 NONSTATUTORY STOCK OPTION PLAN

EXERCISE NOTICE

Harmonic Inc.
549 Baltic Way

Sunnyvale, CA 94089-1140

Attention: Stock Option Administrator

1. Exercise of Option. Effective as of today, _____, _____, the undersigned ("Purchaser") hereby elects to purchase _____ shares (the "Shares") of the Common Stock of Harmonic Inc. (the "Company") under and pursuant to the 1999 Nonstatutory Stock Option Plan (the "Plan") and the Stock Option Agreement dated _____ (the "Option Agreement"). The purchase price for the Shares shall be \$_____, as required by the Option Agreement.

2. Delivery of Payment. Purchaser herewith delivers to the Company the full purchase price for the Shares.

3. Representations of Purchaser. Purchaser acknowledges that Purchaser has received, read and understood the Plan and the Option Agreement and agrees to abide by and be bound by their terms and conditions.

4. Rights as Shareholder. Until the issuance (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company) of the Shares, no right to vote or receive dividends or any other rights as a shareholder shall exist with respect to the Optioned Stock, notwithstanding the exercise of the Option. The Shares so acquired shall be issued to the Optionee as soon as practicable after exercise of the Option. No adjustment will be made for a dividend or other right for which the record date is prior to the date of issuance, except as provided in Section 12 of the Plan.

5. Tax Consultation. Purchaser understands that Purchaser may suffer adverse tax consequences as a result of Purchaser's purchase or disposition of the Shares. Purchaser represents that Purchaser has consulted with any tax consultants Purchaser deems advisable in connection with the purchase or disposition of the Shares and that Purchaser is not relying on the Company for any tax advice.

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6. Entire Agreement; Governing Law. The Plan and Option Agreement are incorporated herein by reference. This Agreement, the Plan and the Option Agreement constitute the entire agreement of the parties with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements of the Company and Purchaser with respect to the subject matter hereof, and may not be modified adversely to the Purchaser's interest except by means of a writing signed by the Company and Purchaser. This agreement is governed by the internal substantive laws, but not the choice of law rules, of Delaware.

Submitted by:

PURCHASER

Accepted by:

HARMONIC INC.

Signature

By

Print Name

Title

Address:

This SECOND AMENDED AND RESTATED LOAN AND SECURITY AGREEMENT, dated as of March 5, 1999, is between SILICON VALLEY BANK ("Bank") and HARMONIC LIGHTWAVES, INC. (doing business in California as DELAWARE HARMONIC LIGHTWAVES, INC.), a Delaware corporation ("Borrower").

The parties agree as follows:

1. DEFINITIONS AND CONSTRUCTION

1.1. Definitions. As used in this Agreement, the following terms shall have the following definitions:

"Accounts" means all presently existing and hereafter arising accounts, contract rights, and all other forms of obligations owing to Borrower arising out of the sale or lease of goods (including, without limitation, the licensing of software and other technology) or the rendering of services by Borrower, whether or not earned by performance, and any and all credit insurance, guaranties, and other security therefor, as well as all merchandise returned to or reclaimed by Borrower and Borrower's Books relating to any of the foregoing.

"Affiliate" means, with respect to any Person, any Person that owns or controls directly or indirectly such Person, any Person that controls or is controlled by or is under common control with such Person, and each of such Person's senior executive officers, directors, partners and, for any Person that is a limited liability company, such Persons, managers and members.

"Bank Expenses" means all reasonable costs or expenses (including reasonable attorneys' fees and expenses) incurred in connection with the preparation, negotiation, administration, and enforcement of the Loan Documents; and Bank's reasonable attorneys' fees and expenses incurred in amending, enforcing or defending the Loan Documents, (including fees and expenses of appeal or review, or those incurred in any Insolvency Proceeding) whether or not suit is brought.

"Borrower's Books" means all of Borrower's books and records including, without limitation: ledgers; records concerning Borrower's assets or liabilities, the Collateral, business operations or financial condition; and all computer programs, or tape files, and the equipment, containing such information if such equipment is necessary for the review of such information.

"Borrowing Base" means an amount equal to 70% of Eligible Accounts, as determined by Bank with reference to the most recent Borrowing Base Certificate delivered by Borrower.

"Business Day" means any day that is not a Saturday, Sunday, or other day on which banks in the State of California are authorized or required to close.

"Closing Date" means the date of this Agreement.

"Collateral" means the property described on Exhibit A attached hereto; provided that the "Collateral" does not include any Excluded Property.

"Contingent Obligation" means, as applied to any Person, any direct or indirect liability, contingent or otherwise, of that Person with respect to (i) any indebtedness, lease, dividend, letter of credit or other obligation of another, including, without limitation, any such

agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices; provided that the term "Contingent Obligation" shall not include endorsements for collection or deposit in the ordinary course of business. The amount of any Contingent Obligation shall be deemed to be an amount equal to the stated or determined amount of the primary obligation in respect of which such Contingent Obligation is made or, if not stated or determinable, the maximum reasonably anticipated liability in respect thereof as determined by such Person in good faith; provided that such amount shall not in any event exceed the maximum amount of the obligations under the guarantee or other support arrangement.

"Copyrights" means any and all copyright rights, copyright applications, copyright registrations and like protections in each work or authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held.

"Credit Extension" means each Revolving Loan, Equipment Loan, Letter of Credit, or any other extension of credit by Bank for the benefit of Borrower hereunder.

"Current Assets" means, as of any applicable date, all amounts that should, in accordance with GAAP, be included as current assets on the consolidated balance sheet of Borrower and its Subsidiaries as at such date.

"Current Liabilities" means, as of any applicable date, all amounts that should, in accordance with GAAP, be included as current liabilities on the consolidated balance sheet of Borrower and its Subsidiaries, as at such date, plus, to the extent not already included therein, all outstanding Revolving Loans and the current portion of the outstanding Equipment Loans and Existing Equipment Loans, the aggregate outstanding face amount (including drawn but unreimbursed Letters of Credit) of outstanding Letters of Credit (including the Existing Letters of Credit) in excess of \$2,000,000 (exclusive of any cash collateral which secures Borrower's obligations to Bank in respect of such Letters of Credit, which cash collateral has been provided on terms and conditions acceptable to Bank), and all other Indebtedness that is payable upon demand or within one year from the date of determination thereof unless such Indebtedness is renewable or extendable at the option of Borrower or any Subsidiary to a date more than one year from the date of determination, but excluding Subordinated Debt.

"Default" means any condition or event which constitutes an Event of Default or which with the giving of notice or lapse of time or both would, unless cured or waived, become an Event of Default.

"Eligible Accounts" means those Accounts that arise in the ordinary course of Borrower's business that comply with all of Borrower's representations and warranties to Bank set forth in Section 5.4; provided that standards of eligibility may be revised from time to time by Bank in Bank's reasonable judgment effective upon 10 days prior notice to Borrower. Eligible Accounts shall not include the following:

(a) Accounts that the account debtor has failed to pay within 90 days of invoice date;

(b) Accounts with respect to an account debtor, 50% of whose Accounts the account debtor has failed to pay within 90 days of invoice date;

(c) Accounts with respect to an account debtor, including Affiliates, whose total obligations to Borrower exceed 25% of all Accounts, to the extent such obligations exceed the aforementioned percentage, except as approved in writing by Bank;

(d) Accounts with respect to which the account debtor does not have its principal place of business in the United States except for Eligible Foreign Accounts;

(e) Accounts with respect to which the account debtor is a federal, state, or local governmental entity or any department, agency, or instrumentality thereof;

(f) Accounts with respect to which Borrower is liable to the account debtor, but only to the extent of any amounts owing to the account debtor (sometimes referred to as "contra" accounts, e.g. accounts payable, customer deposits, credit accounts etc.);

(g) Accounts generated by demonstration or promotional equipment, or with respect to which goods are placed on consignment, guaranteed sale, sale or return, sale on approval, bill and hold, or other terms by reason of which the payment by the account debtor may be conditional;

(h) Accounts with respect to which the account debtor is an Affiliate, officer, employee, or agent of Borrower;

(i) Accounts with respect to which the account debtor disputes liability or makes any claim with respect thereto as to which Bank believes, in its sole discretion, that there may be a basis for dispute (but only to the extent of the amount subject to such dispute or claim), or is subject to any Insolvency Proceeding, or becomes insolvent, or goes out of business;

(j) Accounts subject to any Lien;

(k) Accounts which are in whole or in part the direct or indirect proceeds of any Excluded Property; and

(l) Accounts the collection of which Bank reasonably determines after reasonable inquiry and consultation with Borrower to be doubtful.

"Eligible Foreign Accounts" means Accounts with respect to which the account debtor is Siemens A.G., a German corporation, or other account debtors, if any, as may be from time to time approved in writing by Bank.

"Equipment" means all present and future machinery, equipment, tenant improvements, furniture, fixtures, vehicles, tools, parts and attachments in which Borrower has any interest.

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"Equipment Availability End Date" has the meaning set forth in Section 2.1.3.

"Equipment Commitment" means a credit extension of up to \$1,500,000 during the period from the Closing Date to March 31, 1999, plus an additional \$1,500,000 thereafter.

"Equipment Loan" has the meaning set forth in Section 2.1.3.

"ERISA" means the Employment Retirement Income Security Act of 1974, as amended, and the regulations thereunder.

"Event of Default" has the meaning set forth in Section 8.

"Excluded Property" means any property, rights or licenses to the extent the granting of a security interest therein to Bank (i) would be contrary to applicable law or (ii) is prohibited by or would constitute a default under any agreement or document governing such property, rights or licenses (but only to the extent such prohibition is enforceable as against the Bank under applicable law).

"Existing Agreement" means the Amended and Restated Loan and Security Agreement, dated as of December 24, 1997.

"Existing Equipment Loans" means the "Equipment Advances" outstanding under the Existing Agreement, which Borrower acknowledges have a total outstanding principal amount of \$543,622.20 on the Closing Date.

"Existing Letters of Credit" means the following letters of credit issued under the Existing Agreement: (a) letter of credit no. SVB97IS0635 for a liability amount of US\$400,000 (as amended) in favor of Barclays Bank PLC as beneficiary, (b) letter of credit no. SVB98IS0890 for a liability amount of US\$500,000 in favor of Bank Hapoalim, B.M. as beneficiary, (c) letter of credit no. SVB98IS0905 for a liability amount of US\$450,000 (as amended) in favor of

Rockwell Semiconductor Systems as beneficiary, and (d) letter of credit no.SVB98IS1052 for a liability amount of US\$1,019,565 in favor of Golden Channel as beneficiary.

"GAAP" means generally accepted accounting principles as in effect in the United States from time to time.

"Guarantor" means any present or future guarantor of the Obligations.

"Indebtedness" means (a) all indebtedness for borrowed money or the deferred purchase price of property or services, including without limitation reimbursement and other obligations with respect to surety bonds and letters of credit, (b) all obligations evidenced by notes, bonds, debentures or similar instruments, (c) all capital lease obligations and (d) all Contingent Obligations.

"Insolvency Proceeding" means any proceeding commenced by or against any person or entity under any provision of the United States Bankruptcy Code, as amended, or under any other bankruptcy or insolvency law, including assignments for the benefit of creditors, formal or informal moratoria, compositions, extension generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

"Intellectual Property Collateral" means all right, title, and interest of Borrower in any of the following, whether now existing or hereafter acquired or created:

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(a) Copyrights, Trademarks, Patents, and Mask Works;

(b) Any and all trade secrets, and any and all intellectual property rights in computer software and computer software products;

(c) Any and all design rights;

(d) Any and all claims for damages by way of past, present and future infringement of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(e) All licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works, and all license fees and royalties arising from such use to the extent permitted by such license or rights;

(f) All amendments, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(g) All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

"Inventory" means all present and future inventory in which Borrower has any interest, including merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products intended for sale or lease or to be furnished under a contract of service, of every kind and description now or at any time hereafter owned by or in the custody or possession, actual or constructive, of Borrower, including such inventory as is temporarily out of its custody or possession or in transit and including any returns upon any accounts or other proceeds, including insurance proceeds, resulting from the sale or disposition of any of the foregoing and any documents of title representing any of the above.

"Investment" means any beneficial ownership of (including stock, partnership interest or other securities) any Person, or any loan, advance or capital contribution to any Person.

"IRC" means the Internal Revenue Code of 1986, as amended, and the regulations thereunder.

"Letter of Credit" means the Existing Letters of Credit and any

letter of credit or similar undertaking issued by Bank pursuant to Section 2.1.2.

"Lien" means any mortgage, lien, deed of trust, charge, pledge, security interest or other encumbrance (or any agreement to grant any of the foregoing, whether or not contingent on the happening of any future event).

"Loan" means a Revolving Loan, an Equipment Loan, or an Existing Equipment Loan.

"Loan Documents" means, collectively, this Agreement, any note or notes executed by Borrower, and any other present or future agreement entered into between Borrower and/or for the benefit of Bank in connection with this Agreement, all as amended, extended or restated

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from time to time.

"Mask Works" means all mask work or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired.

"Material Adverse Effect" means a material adverse effect on (i) the business operations or condition (financial or otherwise) of Borrower and its Subsidiaries taken as a whole, (ii) the ability of Borrower to repay the Obligations or otherwise perform its obligations under the Loan Documents, (iii) the enforceability or binding effect of the Loan Documents, or (iv) the attachment, perfection, or priority of Bank's security interests in the Collateral or the value of the Collateral.

"Negotiable Collateral" means all of Borrower's present and future letters of credit of which it is a beneficiary, notes, drafts, instruments, securities, documents of title, and chattel paper.

"Obligations" means all debt, principal, interest, Bank Expenses and other amounts owed to Bank by Borrower pursuant to this Agreement or any other Agreement (including, without limitation, Borrower's credit card facility with Bank), whether absolute or contingent, due or to become due, now existing or hereafter arising, including any interest that accrues after the commencement of an Insolvency Proceeding and including any debt, liability, or obligation owing from Borrower to others that Bank may have obtained by assignment or otherwise.

"Overadvance" means that at any time (a) the sum of Revolving Loans, the Equipment Loans, the Existing Equipment Loans, and the face amount of all outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit) exceeds the lesser of the Revolving Commitment or the Borrowing Base, or (b) the Equipment Loans and the Existing Equipment Loans exceed the Equipment Commitment. For purposes of calculating whether or not an Overadvance exists, \$20,000 shall be deemed to be at all times outstanding as Revolving Loans (such amount being the credit limit of Borrower's credit card facility with Bank).

"Patents" means all patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same.

"Payment Date" means the 23rd calendar day of each month.

"Permitted Indebtedness" means:

(a) Indebtedness of Borrower in favor of Bank arising under this Agreement or any other Loan Document;

(b) Subordinated Debt;

(c) Indebtedness existing on the Closing Date and disclosed in the Schedule;

(d) Indebtedness to trade creditors incurred in the ordinary course of business and not past due;

(e) Indebtedness secured by Permitted Liens;

(f) Indebtedness of Borrower to any Subsidiary and Contingent Obligations of any Subsidiary with respect to obligations of Borrower (provided that the primary obligations are not prohibited hereby), and Indebtedness of any Subsidiary to any other Subsidiary and Contingent Obligations of any Subsidiary with respect to obligations of any other Subsidiary (provided that the primary obligations are not prohibited hereby);

(g) Capital leases or indebtedness incurred solely to purchase equipment which is secured in accordance with clause (c) of "Permitted Liens" below and is not in excess of the lesser of the purchase price of such equipment or the fair market value of such equipment on the date of acquisition;

(h) Other Indebtedness not otherwise permitted by Section 7.4 not exceeding \$500,000 in the aggregate outstanding at any time; and

(i) Extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness (c) through (e) above, provided that the principal amount thereof is not increased or the terms thereof are not modified to impose more burdensome terms upon Borrower or its Subsidiary, as the case may be.

"Permitted Investment" means:

(a) Investments existing on the Closing Date disclosed in the Schedule;

(b) (i) marketable direct obligations issued or unconditionally guaranteed by the United States of America or any agency or any State thereof maturing within one (1) year from the date of acquisition thereof, (ii) commercial paper maturing no more than one (1) year from the date of creation thereof and currently having the highest rating obtainable from either Standard & Poor's Corporation or Moody's Investors Service, Inc., and (iii) certificates of deposit maturing no more than one (1) year from the date of investment therein issued by Bank;

(c) Investments consisting of negotiable instruments held for deposit or collection or similar transactions in the ordinary course of business;

(d) Investments consisting of receivables owing to Borrower or its Subsidiaries by Persons and advances to customers or suppliers, in each case, if created, acquired or made in the ordinary course of business; provided that this paragraph (d) shall not apply to Investments owing by Subsidiaries to Borrower;

(e) Investments consisting of (i) compensation of employees, officers and directors of Borrower or its Subsidiaries so long as the Board of Directors of Borrower determines that such compensation is in the best interests of Borrower, (ii) travel advances, employee relocation loans and other employee loans and advances in the ordinary course of business, (iii) loans to employees, officers or directors relating to the purchase of equity securities of Borrower or its Subsidiaries pursuant to employee stock purchase plans approved by Borrower's Board of Directors, and (iv) other loans to officers and employees approved by the Board of Directors in an aggregate amount not in excess of \$250,000 outstanding at any time;

(f) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of business;

(g) Investments pursuant to or arising under currency agreements or interest rate

swap agreements entered into in the ordinary course of business to mitigate risks of fluctuation in exchange rates and interest rates and not for speculative purposes;

(h) Investments consisting of prepaid royalties and other credit extensions to, customers and suppliers who are not Affiliates, in the ordinary course of business;

(i) Investments constituting acquisitions permitted under Section 7.3;

(j) Deposit accounts of Borrower and its Subsidiaries maintained for the purpose of making deposits, collections, and payments in the ordinary course of business;

(k) Investments permitted by Borrower's investment policy, as amended from time to time, provided that such investment policy and any such amendment thereto has been approved by Bank;

(l) Investments in Subsidiaries or Investments of Subsidiaries in or to other Subsidiaries or the Borrower so long as (i) the Subsidiaries receiving such Investment were either Subsidiaries of the Borrower on the Closing Date or were acquired in a transaction permitted by Section 7.3 and (ii) the aggregate amount of all Investments in Borrower's direct and indirect Subsidiaries does not at any time exceed 15% of Tangible Net Worth; and

(m) Other Investments not otherwise permitted by Section 7.7 not exceeding \$500,000 in the aggregate outstanding at any time.

"Permitted Liens" means the following:

(a) Any Liens existing on the Closing Date and disclosed in the Schedule or arising under this Agreement or the other Loan Documents;

(b) Liens for taxes, fees, assessments or other governmental charges or levies, either not delinquent or being contested in good faith by appropriate proceedings and as to which adequate reserves are maintained on Borrower's Books in accordance with GAAP, provided the same have no priority over any of Bank's security interests;

(c) Liens (i) upon or in any Equipment acquired or held by Borrower or any of its Subsidiaries to secure the purchase price of such Equipment or indebtedness incurred solely for the purpose of financing the acquisition of such Equipment, or (ii) existing on such equipment at the time of its acquisition, provided that the Lien is confined solely to the property so acquired and improvements thereon, and the proceeds of such equipment;

(d) Liens on assets (including the proceeds thereof and accessions thereto) that existed at the time such assets were acquired by Borrower or any Subsidiary (including Liens on assets of any corporation that existed at the time it became or becomes a Subsidiary); provided such Liens are not granted in contemplation of or in connection with the acquisition of such asset by Borrower or a Subsidiary;

(e) Liens in favor of customs and revenue authorities arising as a matter of law to secure payments of customs duties in connection with the importation of goods;

(f) Deposits under worker's compensation, unemployment insurance, social security and other similar laws, or to secure the performance of bids, tenders or contracts (other

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than for the repayment of borrowed money) or to secure indemnity, performance or other similar bonds for the performance of bids, tenders or contracts (other than for the repayment of borrowed money) or to secure statutory obligations (other than liens arising under ERISA or environmental liens) or surety or appeal bonds, or to secure indemnity, performance or other similar bonds in the ordinary course of business;

(g) Leases or subleases and non-exclusive licenses or sublicenses granted to others in the ordinary course of Borrower's business not

interfering in any material respect with the business of Borrower and its Subsidiaries taken as a whole, provided that such leases, subleases, licenses and sublicenses do not prohibit the grant of the security interest granted hereunder; and

(e) Liens arising from judgments, decrees or attachments in circumstances not otherwise constituting an Event of Default;

(f) Easements, reservations, rights-of-way, restrictions, minor defects or irregularities in title and other similar charges or encumbrances affecting real property not constituting a Material Adverse Effect;

(g) Liens that are not prior to the Lien of Bank which constitute rights of set-off of a customary nature or bankers' Liens with respect to amounts on deposit, whether arising by operation of law or by contract, in connection with arrangements entered into with banks in the ordinary course of business; and

(h) Liens incurred in connection with the extension, renewal or refinancing of the indebtedness secured by Liens of the type described in clauses (a) and (d) above, provided that any extension, renewal or replacement Lien shall be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness being extended, renewed or refinanced does not increase.

"Person" means any individual, sole proprietorship, partnership, limited liability company, joint venture, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or governmental agency.

"Prime Rate" means the variable rate of interest, per annum, most recently announced by Bank, as its "prime rate," whether or not such announced rate is the lowest rate available from Bank.

"Quick Assets" means, as of any applicable date, the consolidated cash, cash equivalents, accounts receivable (net of reserves) and investments with maturities of fewer than 90 days of Borrower determined in accordance with GAAP; provided that accounts receivable due from Golden Channel and any cash securing any letter of credit or other performance guaranty in favor of Golden Channel shall not be included in Borrower's Quick Assets.

"Responsible Officer" means each of the Chief Executive Officer, the President, the Chief Financial Officer and the Controller of Borrower.

"Revolving Commitment" means a credit extension of up to \$10,000,000.

"Revolving Loan" means a loan advance under the Revolving Commitment.

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"Revolving Maturity Date" means one day prior to the first anniversary of the Closing Date.

"Schedule" means the schedule of exceptions attached hereto, if any.

"Subordinated Debt" means any debt incurred by Borrower that is subordinated to the debt owing by Borrower to Bank on terms acceptable to Bank (and identified as being such by Borrower and Bank). "Subsidiary" means with respect to any Person, corporation, partnership, company association, joint venture, or any other business entity of which more than 50% of the voting stock or other equity interests is owned or controlled, directly or indirectly, by such Person.

"Tangible Net Worth" means as of any applicable date, the consolidated total assets of Borrower and its Subsidiaries minus, without duplication, (i) the sum of any amounts attributable to (a) goodwill, (b) intangible items such as unamortized debt discount and expense, patents, trade and service marks and names, copyrights and research and development expenses except prepaid expenses, and (c) all reserves not already deducted from assets, and (ii) Total Liabilities.

"Total Liabilities" means as of any applicable date, any date as of which the amount thereof shall be determined, all obligations that should, in accordance with GAAP be classified as liabilities on the consolidated balance sheet of Borrower, including in any event all Indebtedness, but specifically excluding Subordinated Debt.

"Trademarks" means any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Borrower connected with and symbolized by such trademarks.

"UCC" means the California Uniform Commercial Code.

"Year 2000 Problem" means the inability of computers, as well as embedded microchips in non-computing devices, to properly perform date-sensitive functions with respect to certain dates prior to and after December 31, 1999.

1.2. Accounting and Other Terms. All accounting terms not specifically defined herein shall be construed in accordance with GAAP and all calculations and determinations made hereunder shall be made in accordance with GAAP. When used herein, the term "financial statements" shall include the notes and schedules thereto. In the computation of periods of time from a specified date to a later specified date, the word "from" means "from and including" and the words "to" and "until" each mean "to but excluding." Periods of days referred to in this Agreement shall be counted in calendar days unless otherwise stated. References to the plural include the singular and to the singular include the plural, references to any gender include any other gender, the part includes the whole, the term "including" is not limiting, and the term "or" has, except where otherwise indicated, the inclusive meaning represented by the phrase "and/or." The words "hereof," "herein," "hereby," "hereunder," and similar terms in this Agreement refer to this Agreement as a whole and not to any particular provision of this Agreement. Article, section, subsection, clause, exhibit and schedule references are to this Agreement, unless otherwise specified. All of the exhibits and schedules attached hereto shall be deemed incorporated herein by reference. All terms contained in this Agreement which are not otherwise specifically defined herein (including the term "good faith") shall have the meanings provided by

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the UCC to the extent the same are used or defined therein.

1.3. No Presumption Against Any Party. Neither this Agreement nor any other Loan Document nor any uncertainty or ambiguity herein or therein shall be construed or resolved using any presumption against any party hereto or thereto, whether under any rule of construction or otherwise. On the contrary, this Agreement and the other Loan Documents have been reviewed by each of the parties and their counsel and, in the case of any ambiguity or uncertainty, shall be construed and interpreted according to the ordinary meaning of the words used so as to fairly accomplish the purposes and intentions of all parties hereto.

2. LOAN AND TERMS OF PAYMENT

2.1. Credit Extensions. Borrower promises to pay to the order of Bank, in lawful money of the United States of America, the aggregate unpaid principal amount of all Credit Extensions made by Bank to Borrower hereunder. Borrower shall also pay interest on the unpaid principal amount of such Loans at rates in accordance with the terms hereof.

2.1.1. (a) Subject to and upon the terms and conditions of this Agreement, Bank agrees to make Revolving Loans to Borrower in an aggregate outstanding amount not to exceed the Revolving Commitment; provided that no such Loan shall result in an Overadvance. Subject to the terms and conditions of this Agreement, amounts borrowed pursuant to this Section 2.1 may be repaid and reborrowed at any time during the term of this Agreement without penalty or premium.

(b) Whenever Borrower desires a Revolving Loan, Borrower will notify Bank by facsimile transmission or telephone no later than 3:00 p.m. Pacific time, on the Business Day that such Revolving Loan is to be made. Each such notification shall be promptly confirmed by a Payment/Loan Form in substantially the form of Exhibit B hereto. Bank is authorized to make Loans

under this Agreement, based upon instructions received from a Responsible Officer or a designee of a Responsible Officer, or without instructions if in Bank's discretion such Loans are necessary to meet Obligations which have become due and remain unpaid. Bank shall be entitled to rely on any telephonic notice given by a person who Bank reasonably believes to be a Responsible Officer or a designee thereof, and Borrower shall indemnify and hold Bank harmless for any damages or loss suffered by Bank as a result of such reliance. Bank will credit the amount of Loans made under this Section 2.1 to Borrower's deposit account.

(c) Interest Rate. Except as set forth in Section 2.3(b), the outstanding principal amount of the Revolving Loans shall bear interest, on the average daily balance thereof, at a per annum rate equal to 0.50 percentage points above the Prime Rate.

(d) The Revolving Commitment shall terminate on the Revolving Maturity Date, at which time all Revolving Loans and accrued interest thereon shall be immediately due and payable.

2.1.2. Letters of Credit.

(a) On and after the Closing Date, the Existing Letters of Credit shall be deemed for all purposes, including for purposes of the fees to be collected pursuant to Section 2.5, and reimbursement of costs and expenses to the extent provided herein, Letters of Credit outstanding under this Agreement and entitled to the benefits of this Agreement and the other

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Loan Documents, and shall be governed by the applications and agreements pertaining thereto and by this Agreement. Subject to the terms and conditions of this Agreement, Bank agrees to issue or cause to be issued Letters of Credit for the account of Borrower in an aggregate outstanding face amount (including drawn but unreimbursed Letters of Credit) not to exceed \$5,000,000, including the Existing Letters of Credit; provided that the issuance of any such Letter of Credit shall not result in an Overadvance. Each Letter of Credit shall have an expiry date no later than 180 days after the Revolving Maturity Date; provided that Borrower's Letter of Credit reimbursement obligation shall be secured by cash on terms acceptable to Bank at any time after the Revolving Maturity Date if the term of this Agreement is not extended by Bank. All Letters of Credit shall be, in form and substance, acceptable to Bank in its sole discretion and shall be subject to the terms and conditions of Bank's form of standard Application and Letter of Credit Agreement.

(b) The obligation of Borrower to immediately reimburse Bank for drawings made under Letters of Credit shall be absolute, unconditional and irrevocable, and shall be performed strictly in accordance with the terms of this Agreement and such Letters of Credit, under all circumstances whatsoever. Borrower shall indemnify, defend, protect, and hold Bank harmless from any loss, cost, expense or liability, including, without limitation, reasonable attorneys' fees, arising out of or in connection with any Letters of Credit.

(c) Borrower may request that Bank issue a Letter of Credit payable in a currency other than United States Dollars. If a demand for payment is made under any such Letter of Credit, Bank shall treat such demand as a Revolving Loan to Borrower of the equivalent of the amount thereof (plus cable charges) in United States currency at the then prevailing rate of exchange in San Francisco, California, for sales of that other currency for cable transfer to the country of which it is the currency.

(d) Upon the issuance of any letter of credit payable in a currency other than United States Dollars, Bank shall create a reserve under the Revolving Commitment for letters of credit against fluctuations in currency exchange rates, in an amount equal to ten percent (10%) of the face amount of such letter of credit. The amount of such reserve may be amended by Bank from time to time to account for fluctuations in the exchange rate. The availability of funds under the Revolving Commitment shall be reduced by the amount of such reserve for so long as such letter of credit remains outstanding.

2.1.3. Equipment Loans.

(a) Availability. Subject to and upon the terms and

conditions of this Agreement, at any time from the date hereof through the Revolving Maturity Date (the "Equipment Availability End Date"), Bank agrees to make advances (each an "Equipment Loan") to Borrower in an aggregate amount not to exceed the Equipment Commitment. Borrower shall deliver to Bank, at the time of each Equipment Loan request, an invoice for the equipment to be financed by such Equipment Loan. The Equipment Loans shall be used only to purchase new Equipment purchased on or after 90 days prior to the date hereof and shall not exceed 100% of the invoice amount of such equipment approved from time to time by Bank, excluding taxes, shipping, warranty charges, freight discounts and installation expense. Software and used Equipment may, however, constitute up to 25% of each Equipment Loan. Each Equipment Loan must be in a minimum amount of \$50,000.

(b) Interest Rate. Except as set forth in Section 2.3(b), the outstanding principal amount of the Equipment Loans and the Existing Equipment Loans shall bear interest,

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on the average daily balance thereof, at a per annum rate equal to 1.00 percentage points above the Prime Rate. Accrued interest on each such Loan shall be payable monthly on each Payment Date and on the date the final installment of principal on the Equipment Loans is due.

(c) Repayment. Any Equipment Loans that are outstanding on the Equipment Availability End Date will be payable in 36 equal monthly installments of principal beginning on the Payment Date next following the Equipment Availability End Date and continuing on each Payment Date thereafter until the 35th such Payment Date, when any remaining balance on the Equipment Loans shall be immediately due and payable. Equipment Loans, once repaid, may not be reborrowed.

(d) Repayment (Existing Equipment Loans). The Existing Equipment Loans will be payable in 33 equal monthly installments of principal (i.e., \$16,473.40 per month) beginning on the Payment Date next following the Closing Date and continuing on each Payment Date thereafter until November 23, 2001, when any remaining balance on the Existing Equipment Loans shall be immediately due and payable.

(e) Notice of Borrowing. When Borrower desires to obtain an Equipment Loan, Borrower shall notify Bank (which notice shall be irrevocable) by facsimile transmission to be received no later than 3:00 p.m. Pacific time one Business Day before the day on which the Equipment Loan is to be made. Such notice shall be substantially in the form of Exhibit B. The notice shall be signed by a Responsible Officer or its designee and include a copy of the invoice for the Equipment to be financed.

2.2. Overadvances. If, at any time or for any reason, any Overadvance shall occur, Borrower shall immediately pay to Bank, in cash, the amount of such Overadvance.

2.3. Default Rates, Payments, and Calculations.

(a) Default Rate. All Obligations shall bear interest, from and after the occurrence and during the continuance of an Event of Default, at a rate equal to five percentage points above the interest rate applicable immediately prior to such occurrence of an Event of Default.

(b) Payments. Interest hereunder shall be due and payable on each Payment Date. Borrower hereby authorizes Bank to debit any accounts with Bank, including, without limitation, Account Number 341964970 for payments of principal and interest due on the Obligations and any other amounts owing by Borrower to Bank. Bank will notify Borrower of all debits which Bank has made against Borrower's accounts. Any such debits against Borrower's accounts in no way shall be deemed a set-off. Any interest not paid when due shall be compounded by becoming a part of the Obligations, and such interest shall thereafter accrue interest at the rate then applicable hereunder.

(c) Computation. In the event the Prime Rate is changed from time to time hereafter, the applicable rate of interest hereunder shall be increased or decreased effective as of 12:01 a.m. on the day the Prime Rate is changed, by an amount equal to such change in the Prime Rate. All interest chargeable under the Loan Documents shall be computed on the basis of a

360-day year for the actual number of days elapsed.

2.4. Crediting Payments. So long as no Event of Default has occurred and is continuing, Bank shall credit a wire transfer of funds, check or other item of payment to such deposit account

or Obligation as Borrower specifies. After the occurrence and during the continuance of an Event of Default, the receipt by Bank of any wire transfer of funds, check, or other item of payment, whether directed to Borrower's deposit account with Bank or to the Obligations or otherwise, shall be immediately applied to conditionally reduce Obligations, but shall not be considered a payment in respect of the Obligations unless such payment is of immediately available federal funds or unless and until such check or other item of payment is honored when presented for payment. Notwithstanding anything to the contrary contained herein, any wire transfer or payment received by Bank after 12:00 noon Pacific time shall be deemed to have been received by Bank as of the opening of business on the immediately following Business Day. Whenever any payment to Bank under the Loan Documents would otherwise be due (except by reason of acceleration) on a date that is not a Business Day, such payment shall instead be due on the next Business Day, and additional fees or interest, as the case may be, shall accrue and be payable for the period of such extension.

2.5. Fees. Borrower shall pay to Bank the following:

(a) Facility Fees. The following facility fees which shall be fully earned and non-refundable on the date when payable:

(i) A revolving facility fee of \$50,000, which shall be payable as follows: (A) \$37,250 on the Closing Date and (B) \$12,750 on July 31, 1999; provided that such \$12,750 shall not be payable if as of July 2, 1999, Borrower's financial performance (including profit and loss and tangible net worth) equals or exceeds that set forth for such date and the forecasted fiscal period then ending in the financial forecasts delivered to Bank on October 2, 1998; and

(ii) An equipment facility fee of \$15,000, which shall be payable on the date the first Equipment Loan is made;

(b) Letter of Credit Fees. Borrower shall pay to Bank from time to time on demand the normal issuance, presentation, amendment and processing fees, and other standard costs and charges, of Bank relating to letters of credit as from time to time in effect.

(c) Financial Examination and Appraisal Fees. Bank's customary fees and out-of-pocket expenses for Bank's audits of Borrower's Accounts, and for each appraisal of Collateral and financial analysis and examination of Borrower performed from time to time by Bank or its agents;

(d) Bank Expenses. Upon demand from Bank, including, without limitation, upon the date hereof, all Bank Expenses incurred through the date hereof, including reasonable attorneys' fees and expenses, and, after the date hereof, all Bank Expenses, including reasonable attorneys' fees and expenses, as and when they become due.

2.6. Term. Except as otherwise set forth herein, this Agreement shall become effective on the Closing Date and, subject to Section 12.7, shall continue in full force and effect until the Loans and all interest thereon have been fully and finally paid. Notwithstanding the foregoing, Bank shall have the right to terminate its obligation to make Loans under this Agreement immediately and without notice upon the occurrence and during the continuance of an Event of Default.

2.7 Existing Credit Agreement. This Agreement amends and restates the Existing Agreement in its entirety, and the rights, obligations, and remedies of the parties hereto shall be governed by this Agreement, the Loan Documents, and the Loan Documents under the Existing Agreement to the extent not modified hereby, and without limiting the generality of the foregoing (a) the

Existing Equipment Loans shall bear interest at the rate applicable to the Equipment Loans as set forth in this Agreement and (b) the Existing Letters of Credit shall be governed by Section 2.1.2(c) of this Agreement; provided that any rights existing in favor of Bank arising from any commitment fees, indemnification, yield protection, taxes, and similar provisions of the Existing Agreement, relating in each case to the period prior to the Closing Date, shall survive the effectiveness of this Agreement. Bank's agreement to modifications to the Existing Agreement pursuant to this Agreement in no way shall obligate Bank to make any future modifications to the Existing Agreement. Nothing in this Agreement shall constitute a satisfaction of the obligations under the Existing Agreement. It is the intention of Bank and Borrower to retain as liable parties all makers and endorsers of the Existing Agreement, unless the party is expressly released by Bank in writing. No maker, endorser, or guarantor will be released by virtue of this Agreement. Borrower agrees that it has no defenses against the obligations to pay any amounts under the Existing Agreement.

3. CONDITIONS OF LOANS

3.1. Conditions Precedent to Initial Credit Extension. The obligation of Bank to make the initial Credit Extension is subject to the condition precedent that Bank shall have received, in form and substance satisfactory to Bank, the following:

- (a) this Agreement;
- (b) a certificate of the Secretary of Borrower with respect to articles, bylaws, incumbency and resolutions authorizing the execution and delivery of this Agreement;
- (c) an intellectual property security agreement;
- (d) financing statements (Forms UCC-1);
- (e) insurance certificate, together with a loss payment endorsement in form satisfactory to Bank;
- (f) payment of the fees and Bank Expenses then due specified in Section 2.5 hereof;
- (g) certificate of foreign qualification (if applicable), together with evidence of an appropriate fictitious name filing for each county, if any, in which Borrower does business using any d/b/a or other fictitious name;
- (h) guaranties by the Guarantors, if applicable;
- (i) an operating budget for Borrower for the 1999 fiscal year; and
- (j) such other documents, and completion of such other matters, as Bank may reasonably deem necessary or appropriate.

3.2. Conditions Precedent to all Credit Extensions. The obligation of Bank to make each Credit Extension, including the initial Credit Extension, is further subject to the following

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conditions:

- (a) timely receipt by Bank of the Payment/Loan Form as provided in Section 2.1;
- (b) no Overadvance exists or will result from such Credit Extension; and
- (c) the representations and warranties contained in Section 5 shall be true and correct in all material respects on and as of the date of such Payment/Loan Form and on the effective date of each Credit Extension as though made at and as of each such date (except to the extent they relate specifically to an earlier date, in which case such representations and warranties shall continue to have been true and accurate as of such date), and no Default shall have occurred and be continuing, or would result from such

Credit Extension. The making of each Credit Extension shall be deemed to be a representation and warranty by Borrower on the date of such Credit Extension as to the accuracy of the facts referred to in this Section 3.2(b).

4. CREATION OF SECURITY INTEREST

4.1. Grant of Security Interest. Borrower grants and pledges to Bank a continuing security interest in all presently existing and hereafter acquired or arising Collateral in order to secure prompt payment of any and all Obligations and in order to secure prompt performance by Borrower of each of its covenants and duties under the Loan Documents. Borrower acknowledges that Bank may, upon the occurrence and during the continuance of an Event of Default, place a hold on any deposit account pledged as Collateral to secure the Obligations. Notwithstanding termination of this Agreement, Bank's Lien on the Collateral shall remain in effect for so long as any Obligations are outstanding.

4.2. Delivery of Additional Documentation Required. Borrower shall from time to time execute and deliver to Bank, at the request of Bank, all Negotiable Collateral, all financing statements and other documents that Bank may reasonably request, in form satisfactory to Bank, to perfect and continue perfected Bank's security interests in the Collateral and in order to fully consummate all of the transactions contemplated under the Loan Documents.

4.3. Right to Inspect. Bank (through any of its officers, employees, or agents) shall have the right, upon reasonable prior notice, from time to time during Borrower's usual business hours, to inspect Borrower's Books and to make copies thereof and to check, test, and appraise the Collateral in order to verify Borrower's financial condition or the amount, condition of, or any other matter relating to, the Collateral.

4.4. Release of Collateral. Bank agrees to terminate (at Borrower's cost and expense) its security interest in the Collateral if Borrower, pursuant to financial information delivered to Bank under Section 6.3, has a net income greater than zero for any two consecutive fiscal quarter period, beginning with the 4FQ98 and 1FQ99 and has a Quick Ratio of at least 2.00 to 1.00 as at the end of any such two fiscal quarter period; provided that Bank shall have no obligation to terminate any security interests (a) if a Default has occurred and is at that time continuing and (b) unless Bank has received the certificate, in form and substance satisfactory to Bank, of Borrower's chief financial officer that the foregoing financial tests have been satisfied and that the warranties and representations set forth in Article 5 below are true and correct on the date of such certificate with the same force and effect as though made on and as of such date, except to the extent that such representations and warranties expressly relate to an earlier date, in which case such representations and warranties shall continue to be true as of such date.

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5. REPRESENTATIONS AND WARRANTIES

Borrower represents and warrants as follows:

5.1. Due Organization and Qualification. Borrower and each Subsidiary is a corporation duly existing and in good standing under the laws of its state of incorporation and qualified and licensed to do business in, and is in good standing in, any state in which the conduct of its business or its ownership of property requires that it be so qualified, except where the failure to be so qualified could reasonably be expected to have a Material Adverse Effect.

5.2. Due Authorization; No Conflict. The execution, delivery, and performance of the Loan Documents are within Borrower's powers, have been duly authorized, and are not in conflict with nor constitute a breach of any provision contained in Borrower's Articles/Certificate of Incorporation or Bylaws, nor will they constitute an event of default under any material agreement to which Borrower is a party or by which Borrower is bound except to the extent that certain intellectual property agreements prohibit the assignment of the rights thereunder to a third party without Borrower's or other party's consent and the Loan Documents constitute an assignment. Borrower is not in default under any agreement to which it is a party or by which it is bound, which default could reasonably be expected to have a Material Adverse Effect.

5.3. No Prior Encumbrances, No Excluded Property. Borrower has good

and indefeasible title to its property, free and clear of Liens, except as set forth in the Schedule and for Permitted Liens. Bank has a valid and perfected security interest in all Collateral, and such security interest constitutes a first priority security interest in all Collateral, except, in the case of Collateral other than accounts, inventory, and equipment financed with Equipment Loans and Existing Equipment Loans, as set forth in the Schedule and for Permitted Liens. There is no Excluded Property, except (a) as set forth in the Schedule, (b) for Equipment financed by lenders or lessors other than Bank, or (c) has been notified to Bank by Borrower under Section 7.1.

5.4. **Bona Fide Eligible Accounts.** The Eligible Accounts are bona fide existing obligations. The service or property giving rise to such Eligible Accounts has been performed or delivered to the account debtor or to the account debtor's agent for immediate shipment to and unconditional acceptance by the account debtor. Borrower has not received notice of actual or imminent Insolvency Proceeding of any account debtor whose accounts are included in any Borrowing Base Certificate as an Eligible Account.

5.5. **Merchantable Inventory.** All Inventory is in all material respects of good and marketable quality, free from all material defects.

5.6. **Intellectual Property.** Borrower is the sole owner of the Intellectual Property Collateral, except for non-exclusive licenses granted by Borrower to its customers in the ordinary course of business. Each of the Patents is valid and enforceable, and no part of the Intellectual Property Collateral has been judged invalid or unenforceable, in whole or in part, and no claim has been made that any part of the Intellectual Property Collateral violates the rights of any third party. Except for and upon the filing with the United States Patent and Trademark Office with respect to the Patents and Trademarks and the Register of Copyrights with respect to the Copyrights and Mask Works necessary to perfect the security interests created hereunder, and except as has been already made or obtained, no authorization, approval or other action by, and no notice to or filing with, any United States governmental authority or United States regulatory body is required either (i) for the grant by Borrower of the security interest granted hereby or for

the execution, delivery or performance of Loan Documents by Borrower in the United States or (ii) for the perfection in the United States or the exercise by Bank of its rights and remedies hereunder.

5.7. **Name; Location of Chief Executive Office.** Except as disclosed in the Schedule, Borrower has not done business and will not without at least 30 days prior written notice to Bank do business under any name other than that specified on the signature page hereof. The chief executive office of Borrower is located at the address indicated in Section 10 hereof.

5.8. **Litigation.** Except as set forth in the Schedule, there are no actions or proceedings pending, or, to Borrower's knowledge, threatened by or against Borrower or any Subsidiary before any court or administrative agency in which an adverse decision could reasonably be expected to have a Material Adverse Effect.

5.9. **No Material Adverse Change in Financial Statements.** All consolidated financial statements related to Borrower and any Subsidiary that have been delivered by Borrower to Bank fairly present in all material respects Borrower's consolidated financial condition as of the date thereof and Borrower's consolidated results of operations for the period then ended. There has not been a material adverse change in the consolidated financial condition of Borrower since the date of the most recent of such financial statements submitted to Bank on or about the Closing Date.

5.10. **Regulatory Compliance.** Borrower and each Subsidiary has met the minimum funding requirements of ERISA with respect to any employee benefit plans subject to ERISA. No event has occurred resulting from Borrower's failure to comply with ERISA that is reasonably likely to result in Borrower's incurring any liability that could reasonably be expected to have a Material Adverse Effect. Borrower is not an "investment company" or a company "controlled" by an "investment company" within the meaning of the Investment Company Act of 1940. Borrower is not engaged principally, or as one of its important activities, in the business of extending credit for the purpose of purchasing or carrying margin stock (within the meaning of Regulation U of the Board of Governors of

the Federal Reserve System). Borrower has complied with all the provisions of the Federal Fair Labor Standards Act. Borrower has not violated any statutes, laws, ordinances or rules applicable to it, violation of which could reasonably be expected to have a Material Adverse Effect.

5.11. Environmental Condition. None of Borrower's or any Subsidiary's properties or assets has ever been used by Borrower or any Subsidiary or, to the best of Borrower's knowledge, by previous owners or operators, in the disposal of, or to produce, store, handle, treat, release, or transport, any hazardous waste or hazardous substance other than in accordance with applicable law; to the best of Borrower's knowledge, none of Borrower's properties or assets has ever been designated or identified in any manner pursuant to any environmental protection statute as a hazardous waste or hazardous substance disposal site, or a candidate for closure pursuant to any environmental protection statute; no lien arising under any environmental protection statute has attached to any revenues or to any real or personal property owned by Borrower or any Subsidiary; and neither Borrower nor any Subsidiary has received a summons, citation, notice, or directive from the Environmental Protection Agency or any other federal, state or other governmental agency concerning any action or omission by Borrower or any Subsidiary resulting in the release, or other disposition of hazardous waste or hazardous substances into the environment.

5.12. Taxes. Borrower and each Subsidiary has filed or caused to be filed all tax returns

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required to be filed on a timely basis, and has paid, or has made adequate provision for the payment of, all taxes reflected therein, except those being contested in good faith by proper proceedings with adequate reserves under GAAP.

5.13. Subsidiaries. Borrower does not own any stock, partnership interest or other equity securities of any Person, except for Permitted Investments.

5.14. Government Consents. Borrower and each Subsidiary has obtained all consents, approvals and authorizations of, made all declarations or filings with, and given all notices to, all governmental authorities that are necessary for the continued operation of Borrower's business as currently conducted except where the failure to obtain such consent, approval or authorization, to make any such declaration or filing or to give any such notice could not reasonably be expected to have a Material Adverse Effect.

5.15. Year 2000 Compliance. Borrower has conducted a comprehensive review and assessment of Borrower's systems and equipment applications with respect to the Year 2000 Problem. Based on that review and inquiry, Borrower does not believe the Year 2000 Problem, including costs of remediation, will have a Material Adverse Effect. Borrower has developed adequate contingency plans to ensure uninterrupted and unimpaired business operation in the event of a failure of its own systems or equipment due to the Year 2000 Problem, including a general failure of or interruption in its communications and delivery infrastructure.

5.16. Full Disclosure. No representation, warranty or other statement made by Borrower in any certificate or written statement furnished to Bank by Borrower in connection with the transaction contemplated by this Agreement, taken as a whole, contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements contained in such certificates or statements not misleading it being recognized by the Bank that the projections and forecasts provided by Borrower are based on Borrower's reasonable and good faith assessment of the probabilities of future events and that actual results during the period or periods covered by any such projections and forecasts may differ from the projected or forecasted results).

6. AFFIRMATIVE COVENANTS

Borrower covenants and agrees that, until payment in full of all outstanding Obligations, and for so long as Bank may have any commitment to make a Credit Extension hereunder, Borrower shall do all of the following:

6.1. Good Standing. Borrower shall maintain, or cause to be maintained, its and each of its Subsidiaries' corporate existence and good standing in its jurisdiction of incorporation and maintain qualification in each

jurisdiction in which the failure to so qualify could reasonably be expected to have a Material Adverse Effect. Borrower shall maintain, and shall cause each of its Subsidiaries to maintain, to the extent consistent with prudent management of Borrower's business, in force all licenses, approvals and agreements, the loss of which would reasonably be expected to have a Material Adverse Effect.

6.2. Government Compliance. Borrower shall meet, and shall cause each Subsidiary to meet, the minimum funding requirements of ERISA with respect to any employee benefit plans subject to ERISA. Borrower shall comply, and shall cause each Subsidiary to comply, with all statutes, laws, ordinances and government rules and regulations to which it is subject, noncompliance with which could have a Material Adverse Effect.

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6.3. Financial Statements, Reports, Certificates. Borrower shall deliver to Bank: (a) as soon as available, but in any event within 30 days after the end of each month, a company prepared consolidated balance sheet and income statement covering Borrower's consolidated operations during such period, in a form and certified by an officer of Borrower reasonably acceptable to Bank; (b) as soon as available, but in any event within 90 days after the end of Borrower's fiscal year, audited consolidated financial statements of Borrower (which may be in the form of a Form 10-K of the Securities and Exchange Commission) prepared in accordance with GAAP, consistently applied, together with an unqualified opinion on such financial statements of an independent certified public accounting firm reasonably acceptable to Bank; (c) within five days of filing, copies of all statements, reports and notices sent or made available generally by Borrower to its security holders or to any holders of Subordinated Debt and all reports on Form 10-K, 10-Q and 8-K filed with the Securities and Exchange Commission; (d) promptly upon receipt of notice thereof, a report of any legal actions pending or threatened against Borrower or any Subsidiary that could result in damages or costs to Borrower or any Subsidiary of \$100,000.00 or more; (e) prompt notice of any material change in the composition of the Intellectual Property Collateral, including, but not limited to, any subsequent ownership right of Borrower in or to any Copyright, Patent or Trademark not specified in any intellectual property security agreement between Borrower and Bank or knowledge of an event that materially adversely effects the value of the Intellectual Property Collateral; and (f) such budgets, sales projections, operating plans or other financial information as Bank may reasonably request from time to time.

Within 30 days after the last day of each month, Borrower shall deliver to Bank a Borrowing Base Certificate signed by a Responsible Officer in substantially the form of Exhibit C hereto, together with aged listings of accounts receivable and accounts payable and an inventory schedule.

Within 30 days after the last day of each month, Borrower shall deliver to Bank with the monthly financial statements a Compliance Certificate signed by a Responsible Officer in substantially the form of Exhibit D hereto.

Bank shall have a right from time to time hereafter to audit Borrower's Accounts at Borrower's expense, provided that such audits will be conducted no more often than every six months unless an Event of Default has occurred and is continuing.

6.4. Inventory; Returns. Borrower shall keep all Inventory in good and marketable condition, free from all material defects. Returns and allowances, if any, as between Borrower and its account debtors shall be on the same basis and in accordance with the usual customary practices of Borrower, as they exist at the time of the execution and delivery of this Agreement. Borrower shall promptly notify Bank of all returns and recoveries and of all disputes and claims, where the return, recovery, dispute or claim involves more than \$50,000.00.

6.5. Taxes. Borrower shall make, and shall cause each Subsidiary to make, due and timely payment or deposit of all material federal, state, and local taxes, assessments, or contributions required of it by law, and will execute and deliver to Bank, on demand, appropriate certificates attesting to the payment or deposit thereof; and Borrower will make, and will cause each Subsidiary to make, timely payment or deposit of all material tax payments and withholding taxes required of it by applicable laws, including, but not limited to, those laws concerning F.I.C.A., F.U.T.A., state disability, and local, state, and federal income taxes, and will, upon

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 request, furnish Bank with proof satisfactory to Bank indicating that Borrower or a Subsidiary has made such payments or deposits; provided that Borrower or a Subsidiary need not make any payment if the amount or validity of such payment is (I) contested in good faith by appropriate proceedings , (ii) is reserved against (to the extent required by GAAP) by Borrower and (iii) no lien other than a Permitted Lien results.

6.6. Insurance.

(a) Borrower, at its expense, shall keep the Collateral insured against loss or damage by fire, theft, explosion, sprinklers, and all other hazards and risks, and in such amounts, as ordinarily insured against by other owners in similar businesses conducted in the locations where Borrower's business is conducted on the date hereof. Borrower shall also maintain insurance relating to Borrower's ownership and use of the Collateral in amounts and of a type that are customary to businesses similar to Borrower's.

(b) All such policies of insurance shall be in such form, with such companies, and in such amounts as are reasonably satisfactory to Bank. All such policies of property insurance shall contain a lender's loss payable endorsement, in a form satisfactory to Bank, showing Bank as an additional loss payee thereof and all liability insurance policies shall show the Bank as an additional insured, and shall specify that the insurer must give at least 20 days notice to Bank before canceling its policy for any reason. At Bank's request, Borrower shall deliver to Bank certified copies of such policies of insurance and evidence of the payments of all premiums therefor. All proceeds payable under any such policy shall, at the option of Bank, be payable to Bank to be applied on account of the Obligations; provided that so long as no Event of Default has occurred and is continuing, Borrower shall have the option of applying the proceeds of any casualty policy to the replacement or repair of destroyed or damaged property.

6.7. Principal Depository. Borrower shall maintain its principal depository and operating accounts with Bank.

6.8. Quick Ratio. Borrower shall maintain, as of the last day of each calendar month, a ratio of Quick Assets to Current Liabilities of at least 1.25 to 1.00 (2.00 to 1.00 following any termination of Bank's security interest in the Collateral pursuant to Section 4.4.).

6.9. Debt-Net Worth Ratio. Borrower shall maintain, as of the last day of each calendar month, a ratio of Total Liabilities less Subordinated Debt less deferred revenue to Tangible Net Worth plus Subordinated Debt of not more than 0.75 to 1.00.

6.10. Profitability. Borrower shall be profitable for each fiscal quarter, except Borrower may suffer a loss of up to \$200,000 in the fourth fiscal quarter of the 1998 fiscal year and a loss of up to \$1,000,000 in the first fiscal quarter of the 1999 fiscal year.

6.11. Registration of Intellectual Property Rights.

(a) Borrower shall register or cause to be registered (to the extent not already registered) with the United States Patent and Trademark Office or the United States Copyright Office, as applicable, those intellectual property rights listed on Exhibits A, B and C to the Intellectual Property Security Agreement delivered to Bank by Borrower in connection with this Agreement within 10 days of the date of this Agreement. Borrower shall register or cause to be registered with the United States Patent and Trademark Office or the United States Copyright Office, as applicable, those additional intellectual property rights developed or acquired by Borrower from time to time in connection with any product prior to the sale or licensing of such product to any third party, including without limitation revisions or additions to the intellectual property rights listed on such Exhibits A, B and C.

(b) Borrower shall execute and deliver such

additional instruments and documents from time to time as Bank shall reasonably request to perfect Bank's security interest

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in the Intellectual Property Collateral.

(c) Borrower shall (i) protect, defend and maintain the validity and enforceability of the Trademarks, Patents, Copyrights, and Mask Works, (ii) use its best efforts to detect infringements of the Trademarks, Patents, Copyrights and Mask Works and promptly advise Bank in writing of material infringements detected and (iii) not allow any Trademarks, Patents, Copyrights, or Mask Works to be abandoned, forfeited or dedicated to the public without the written consent of Bank, which shall not be unreasonably withheld.

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(d) Bank shall have the right, but not the obligation, to take, at Borrower's sole expense, any actions that Borrower is required under this section to take but which Borrower fails to take, after 15 days' notice to Borrower. Borrower shall reimburse and indemnify Bank for all reasonable costs and reasonable expenses incurred in the reasonable exercise of its rights under this section.

6.12. Further Assurances. At any time and from time to time Borrower shall execute and deliver such further instruments and take such further action as may reasonably be requested by Bank to effect the purposes of this Agreement.

7. NEGATIVE COVENANTS

Borrower covenants and agrees that, so long as any Credit Extension hereunder shall be available and until payment in full of the outstanding Obligations or for so long as Bank may have any commitment to make any Loans, Borrower will not do any of the following:

7.1. Dispositions. Convey, sell, lease, transfer or otherwise dispose of (collectively, a "Transfer"), or permit any of its Subsidiaries to Transfer, all or any part of its business or property, other than Transfers: (i) of inventory in the ordinary course of business, (ii) of non-exclusive licenses and similar arrangements for the use of the property of Borrower or its Subsidiaries in the ordinary course of business; (iii) that constitute payment of normal and usual operating expenses in the ordinary course of business;; (iv) of worn-out or obsolete Equipment, or (v) other Transfers not otherwise permitted under this Section 7.1 in an aggregate amount not to exceed \$10,000 in any fiscal year of the Borrower..

7.2. Changes in Business, Ownership, or Management, Business Locations. Engage in any business, or permit any of its Subsidiaries to engage in any business, other than the businesses currently engaged in by Borrower and any business substantially similar or related thereto (or incidental thereto), or suffer a material change in Borrower's ownership or management. Borrower will not, without at least 30 days prior written notification to Bank, relocate its chief executive office or add any new offices or business locations.

7.3. Mergers or Acquisitions. Merge or consolidate, or permit any of its Subsidiaries to merge or consolidate, with or into any other business organization, or acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the capital stock or property of another Person except the merger or consolidation of one Subsidiary into another Subsidiary or into Borrower.

7.4. Indebtedness. Create, incur, assume or be or remain liable with respect to any Indebtedness, or permit any Subsidiary so to do, other than Permitted Indebtedness.

7.5. Encumbrances. Create, incur, assume or suffer to exist any Lien with respect to any of its property, or assign or otherwise convey any right to receive income, including the sale of any Accounts, or permit any of its Subsidiaries so to do, except for Permitted Liens.

7.6. Distributions. Pay any dividends or make any other distribution

or payment on account of or in redemption, retirement or purchase of any capital stock except for (i) repurchases of stock from former employees or consultants of Borrower in accordance with the

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terms of repurchase or similar agreements between Borrower and such employees in an aggregate amount not to exceed \$100,000 during the term of this Agreement, (ii) distributions payable solely in capital stock of Borrower, (iii) conversions and exchanges of securities of the Borrower into equity securities of the Borrower not constituting Indebtedness, and (iv) repurchases of Borrower's capital stock solely from the proceeds of the issuance by Borrower of capital stock but only if such repurchases are effectuated immediately upon the consummation of such transaction ; provided that in the case of (i) through (iv) above, immediately prior to and following such transaction, there exists no Event of Default.

7.7. Investments. Directly or indirectly acquire or own, or make any Investment in or to any Person, or permit any of its Subsidiaries so to do, other than Permitted Investments.

7.8. Transactions with Affiliates. Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of Borrower except for transactions that are in the ordinary course of Borrower's business, upon fair and reasonable terms that are no less favorable to Borrower than would be obtained in an arm's length transaction with a nonaffiliated Person.

7.9. Intellectual Property Agreements. Borrower shall not permit the inclusion in any material contract to which it becomes a party of any provisions that could or might in any way prevent the creation of a security interest in Borrower's rights and interests in any property included within the definition of the Intellectual Property Collateral acquired under such contracts, except to the extent that such provisions are necessary in Borrower's exercise of its reasonable business judgement and has been notified to Bank.

7.10. Subordinated Debt. Make any payment in respect of any Subordinated Debt, or permit any of its Subsidiaries to make any such payment, except in compliance with the terms of such Subordinated Debt, or amend any provision contained in any documentation relating to the Subordinated Debt without Bank's prior written consent.

7.11. Inventory. Store the Inventory with a bailee, warehouseman, or similar party unless Bank has received a pledge of any warehouse receipt covering such Inventory. Except for Inventory sold in the ordinary course of business and except for such other locations as Bank may approve in writing, Borrower shall keep the Inventory only at the location set forth in Section 10 hereof and such other locations of which Borrower gives Bank prior written notice and as to which Borrower signs and files a financing statement where needed to perfect Bank's security interest.

7.12. Compliance. Become an "investment company" or a company controlled by an "investment company," within the meaning of the Investment Company Act of 1940, or become principally engaged in, or undertake as one of its important activities, the business of extending credit for the purpose of purchasing or carrying margin stock, or use the proceeds of any Loan for such purpose; fail to meet the minimum funding requirements of ERISA; permit a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; fail to comply with the Federal Fair Labor Standards Act or violate any other law or regulation, which violation could reasonably be expected to have a Material Adverse Effect; or permit any of its Subsidiaries to do any of the foregoing.

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8. EVENTS OF DEFAULT

Any one or more of the following events shall constitute an "Event of Default" by Borrower under this Agreement:

8.1. Payment Default. If Borrower fails to pay the principal (including Letter of Credit reimbursement obligations) of, or any interest on, any Credit Extensions when due and payable; or fails to pay any portion of any

other Obligations not constituting the principal (including Letter of Credit reimbursement obligations) or interest of such Credit Extensions, including without limitation Bank Expenses, within five days of receipt by Borrower of an invoice for such other Obligations;

8.2. Covenant Default.

(a) If Borrower fails to perform any obligation under Sections 6.3, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11, 6.12, 6.13 or 6.14 or violates any of the covenants contained in Article 7 of this Agreement, or

(b) If Borrower fails or neglects to perform, keep, or observe any other material term, provision, condition, covenant, or agreement contained in this Agreement, in any of the Loan Documents, or in any other present or future agreement between Borrower and Bank and as to any default under such other term, provision, condition, covenant or agreement that can be cured, has failed to cure such default within ten days after the occurrence thereof; provided that if the default cannot by its nature be cured within the ten day period or cannot after diligent attempts by Borrower be cured within such 10 day period, and such default is likely to be cured within a reasonable time, then Borrower shall have an additional reasonable period (which shall not in any case exceed 30 days) to attempt to cure such default, and within such reasonable time period the failure to have cured such default shall not be deemed an Event of Default (provided that no Loans will be required to be made during such cure period);

8.3. Attachment. If any material portion of Borrower's assets is attached, seized, subjected to a writ or distress warrant, or is levied upon, or comes into the possession of any trustee, receiver or person acting in a similar capacity and such attachment, seizure, writ or distress warrant or levy has not been removed, discharged or rescinded within ten days, or if Borrower is enjoined, restrained, or in any way prevented by court order from continuing to conduct all or any material part of its business affairs, or if a judgment or other claim becomes a lien or encumbrance upon any material portion of Borrower's assets, or if a notice of lien, levy, or assessment is filed of record with respect to any of Borrower's assets by the United States Government, or any department, agency, or instrumentality thereof, or by any state, county, municipal, or governmental agency, and the same is not paid within ten days after Borrower receives notice thereof, provided that none of the foregoing shall constitute an Event of Default where such action or event is stayed or an adequate bond has been posted pending a good faith contest by Borrower (provided that no Credit Extensions will be required to be made during such cure period);

8.4. Insolvency. If Borrower becomes insolvent, or if an Insolvency Proceeding is commenced by Borrower, or if an Insolvency Proceeding is commenced against Borrower and is not dismissed or stayed within 30 days (provided that no Loans will be made prior to the dismissal of such Insolvency Proceeding);

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8.5. Other Agreements. If there is:

(a) any event of default under the Existing Agreement; or

(b) a default in any agreement to which Borrower is a party with a third party or parties resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount in excess of \$100,000.00 or that could have a Material Adverse Effect;

8.6. Subordinated Debt. If Borrower makes any payment on account of Subordinated Debt, except to the extent such payment is allowed under any subordination agreement entered into with Bank;

8.7. Judgments. If a judgment or judgments for the payment of money in an amount, individually or in the aggregate, of at least \$100,000 shall be rendered against Borrower and shall remain unsatisfied and unstayed for a period of ten days (provided that no Credit Extensions will be made prior to the satisfaction or stay of such judgment); or

8.8. Misrepresentations. If any material misrepresentation or material misstatement exists now or hereafter in any warranty or representation

set forth herein or in any certificate or writing delivered to Bank by Borrower or any Person acting on Borrower's behalf pursuant to this Agreement or to induce Bank to enter into this Agreement or any other Loan Document.

8.9. **Guaranty.** Any guaranty of all or a portion of the Obligations ceases for any reason to be in full force and effect, or any Guarantor fails to perform any obligation under any guaranty of all or a portion of the Obligations, or any material misrepresentation or material misstatement exists now or hereafter in any warranty or representation set forth in any guaranty of all or a portion of the Obligations or in any certificate delivered to Bank in connection with such guaranty, or any of the circumstances described in Sections 8.4, 8.5 or 8.8 occur with respect to any Guarantor.

9. BANK'S RIGHTS AND REMEDIES

9.1. **Rights and Remedies.** Upon the occurrence and during the continuance of an Event of Default, Bank may, at its election, without notice of its election and without demand, do any one or more of the following, all of which are authorized by Borrower:

(a) Declare all Obligations, whether evidenced by this Agreement, by any of the other Loan Documents, or otherwise, immediately due and payable (provided that upon the occurrence of an Event of Default described in Section 8.5 all Obligations shall become immediately due and payable without any action by Bank);

(b) Cease advancing money or extending credit to or for the benefit of Borrower under this Agreement or under any other agreement between Borrower and Bank;

(c) Demand that Borrower (i) deposit cash with Bank in an amount equal to the amount of any Letters of Credit remaining undrawn, as collateral security for the repayment of any future drawings under such Letters of Credit, and Borrower shall forthwith deposit and pay such amounts, and (ii) pay in advance all Letters of Credit fees scheduled to be paid or payable over the remaining term of the Letters of Credit;

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(d) Settle or adjust disputes and claims directly with account debtors for amounts, upon terms and in whatever order that Bank reasonably considers advisable;

(e) Without notice to or demand upon Borrower, make such payments and do such acts as Bank considers necessary or reasonable to protect its security interest in the Collateral. Borrower agrees to assemble the Collateral if Bank so requires, and to make the Collateral available to Bank as Bank may designate. Borrower authorizes Bank to enter the premises where the Collateral is located, to take and maintain possession of the Collateral, or any part of it, and to pay, purchase, contest, or compromise any encumbrance, charge, or lien which in Bank's determination appears to be prior or superior to its security interest and to pay all expenses incurred in connection therewith. With respect to any of Borrower's premises, Borrower hereby grants Bank a license to enter such premises and to occupy the same, without charge in order to exercise any of Bank's rights or remedies provided herein, at law, in equity, or otherwise;

(f) Without notice to Borrower set off and apply to the Obligations any and all (i) balances and deposits of Borrower held by Bank, or (ii) indebtedness at any time owing to or for the credit or the account of Borrower held by Bank;

(g) Ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell (in the manner provided for herein) the Collateral. Bank is hereby granted a non-exclusive, royalty-free license or other right, solely pursuant to the provisions of this Section 9.1, to use, without charge, Borrower's labels, patents, copyrights, mask works, rights of use of any name, trade secrets, trade names, trademarks, service marks, and advertising matter, or any property of a similar nature, as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral and, in connection with Bank's exercise of its rights under this Section 9.1, Borrower's rights under all licenses and all franchise agreements shall inure to Bank's benefit;

(h) Sell the Collateral at either a public or private sale, or both, by way of one or more contracts or transactions, for cash or on terms, in such manner and at such places (including Borrower's premises) as Bank determines is commercially reasonable, and apply the proceeds thereof to the Obligations in whatever manner or order it deems appropriate;

(i) Bank may credit bid and purchase at any public sale, or at any private sale as permitted by law; and

(j) Any deficiency that exists after disposition of the Collateral as provided above will be paid immediately by Borrower.

9.2. Power of Attorney. Effective only upon the occurrence and during the continuance of an Event of Default, Borrower hereby irrevocably appoints Bank (and any of Bank's designated officers, or employees) as Borrower's true and lawful attorney to: (a) send requests for verification of Accounts or notify account debtors of Bank's security interest in the Accounts; (b) endorse Borrower's name on any checks or other forms of payment or security that may come into Bank's possession; (c) sign Borrower's name on any invoice or bill of lading relating to any Account, drafts against account debtors, schedules and assignments of Accounts, verifications of Accounts, and notices to account debtors; (d) make, settle, and adjust all claims under and decisions with respect to Borrower's policies of insurance; and (e) settle and adjust disputes and

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claims respecting the accounts directly with account debtors, for amounts and upon terms which Bank determines to be reasonable; (f) to modify, in its sole discretion, any intellectual property security agreement entered into between Borrower and Bank without first obtaining Borrower's approval of or signature to such modification by amending Exhibit A, Exhibit B, Exhibit C, and Exhibit D, thereof, as appropriate, to include reference to any right, title or interest in any Copyrights, Patents, Trademarks, Mask Works acquired by Borrower after the execution hereof or to delete any reference to any right, title or interest in any Copyrights, Patents, Trademarks, or Mask Works in which Borrower no longer has or claims any right, title or interest; (g) to file, in its sole discretion, one or more financing or continuation statements and amendments thereto, relative to any of the Collateral without the signature of Borrower where permitted by law; and (h) to transfer the Intellectual Property Collateral into the name of Bank or a third party to the extent permitted under the UCC provided Bank may exercise such power of attorney to sign the name of Borrower on any of the documents described in Section 4.2 regardless of whether an Event of Default has occurred. The appointment of Bank as Borrower's attorney in fact, and each and every one of Bank's rights and powers, being coupled with an interest, is irrevocable until all of the Obligations have been fully repaid and performed and Bank's obligation to provide Loans hereunder is terminated.

9.3. Accounts Collection. Upon the occurrence and during the continuance of an Event of Default, Bank may notify any Person owing funds to Borrower of Bank's security interest in such funds and verify the amount of such Account. Borrower shall collect all amounts owing to Borrower for Bank, receive in trust all payments as Bank's trustee, and if requested or required by Bank, immediately deliver such payments to Bank in their original form as received from the account debtor, with proper endorsements for deposit.

9.4. Bank Expenses. If Borrower fails to pay any amounts or furnish any required proof of payment due to third persons or entities, as required under the terms of this Agreement, then Bank may do any or all of the following: (a) make payment of the same or any part thereof; (b) set up such reserves under the Revolving Commitment as Bank deems necessary to protect Bank from the exposure created by such failure; or (c) obtain and maintain insurance policies of the type discussed in Section 6.6 of this Agreement, and take any action with respect to such policies as Bank deems prudent. Any amounts so paid or deposited by Bank shall constitute Bank Expenses, shall be immediately due and payable, and shall bear interest at the then applicable rate hereinabove provided, and shall be secured by the Collateral. Any payments made by Bank shall not constitute an agreement by Bank to make similar payments in the future or a waiver by Bank of any Event of Default under this Agreement.

9.5. Bank's Liability for Collateral. So long as Bank complies with reasonable banking practices, Bank shall not in any way or manner be liable or

responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage thereto occurring or arising in any manner or fashion from any cause; (c) any diminution in the value thereof; or (d) any act or default of any carrier, warehouseman, bailee, forwarding agency, or other person whomsoever. All risk of loss, damage or destruction of the Collateral shall be borne by Borrower.

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9.6. Remedies Cumulative. Bank's rights and remedies under this Agreement, the Loan Documents, and all other agreements shall be cumulative. Bank shall have all other rights and remedies not expressly set forth herein as provided under the UCC, by law, or in equity. No exercise by Bank of one right or remedy shall be deemed an election, and no waiver by Bank of any Event of Default on Borrower's part shall be deemed a continuing waiver. No delay by Bank shall constitute a waiver, election, or acquiescence by it. No waiver by Bank shall be effective unless made in a written document signed on behalf of Bank and then shall be effective only in the specific instance and for the specific purpose for which it was given.

9.7. Demand; Protest. Borrower waives demand, protest, notice of protest, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees at any time held by Bank on which Borrower may in any way be liable.

10. NOTICES

Unless otherwise provided in this Agreement, all notices or demands by any party relating to this Agreement or any other agreement entered into in connection herewith shall be in writing and (except for financial statements and other informational documents which may be sent by first-class mail, postage prepaid) shall be personally delivered or sent by a recognized overnight delivery service, by certified mail, postage prepaid, return receipt requested, or by telefacsimile to Borrower or to Bank, as the case may be, at its addresses set forth below for such party on the signature pages hereof. The parties hereto may change the address at which they are to receive notices hereunder, by notice in writing in the foregoing manner given to the other.

11. CHOICE OF LAW AND VENUE; WAIVER OF JURY TRIAL

The Loan Documents shall be governed by, and construed in accordance with, the internal laws of the State of California, without regard to principles of conflicts of law. Each of Borrower and Bank hereby submits to the exclusive jurisdiction of the state and Federal courts located in the County of Santa Clara, State of California. BORROWER AND BANK EACH HEREBY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF ANY OF THE LOAN DOCUMENTS OR ANY OF THE TRANSACTIONS CONTEMPLATED THEREIN, INCLUDING CONTRACT CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW OR STATUTORY CLAIMS. EACH PARTY RECOGNIZES AND AGREES THAT THE FOREGOING WAIVER CONSTITUTES A MATERIAL INDUCEMENT FOR IT TO ENTER INTO THIS AGREEMENT. EACH PARTY REPRESENTS AND WARRANTS THAT IT HAS REVIEWED THIS WAIVER WITH ITS LEGAL COUNSEL AND THAT IT KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL.

12. GENERAL PROVISIONS

12.1. Successors and Assigns. This Agreement shall bind and inure to the benefit of the respective successors and permitted assigns of each of the parties; provided that neither this Agreement nor any rights hereunder may be assigned by Borrower without Bank's prior written consent, which consent may be granted or withheld in Bank's sole discretion. Bank shall have the right without the consent of or notice to Borrower to sell, transfer, negotiate, or grant

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participation in all or any part of, or any interest in, Bank's obligations, rights and benefits hereunder.

12.2. Indemnification. Borrower shall, indemnify, defend, protect and hold harmless Bank and its officers, employees, and agents against: (a) all obligations, demands, claims, and liabilities claimed or asserted by any other

party in connection with the transactions contemplated by the Loan Documents; and (b) all losses or Bank Expenses in any way suffered, incurred, or paid by Bank as a result of or in any way arising out of, following, or consequential to transactions between Bank and Borrower whether under the Loan Documents, or otherwise (including without limitation reasonable attorneys fees and expenses), except for losses caused by Bank's gross negligence or willful misconduct.

12.3. Time of Essence. Time is of the essence for the performance of all obligations set forth in this Agreement.

12.4. Severability of Provisions. Each provision of this Agreement shall be severable from every other provision of this Agreement for the purpose of determining the legal enforceability of any specific provision.

12.5. Amendments in Writing, Integration. This Agreement cannot be amended or terminated except by a writing signed by Borrower and Bank. All prior agreements, understandings, representations, warranties, and negotiations between the parties hereto with respect to the subject matter of this Agreement, if any, are merged into this Agreement and the Loan Documents.

12.6. Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, shall be deemed to be an original, and all of which, when taken together, shall constitute but one and the same Agreement.

12.7. Survival. All covenants, representations and warranties made in this Agreement shall continue in full force and effect so long as any obligations remain outstanding. The obligations of Borrower to indemnify Bank with respect to the expenses, damages, losses, costs and liabilities described in Section 12.2 shall survive until all applicable statute of limitations periods with respect to actions that may be brought against Bank have run.

12.8. Confidentiality. In handling any confidential information Bank shall exercise the same degree of care that it exercises with respect to its own proprietary information of the same types to maintain the confidentiality of any non-public information thereby received or received pursuant to this Agreement except that disclosure of such information may be made (i) to the subsidiaries or affiliates of Bank in connection with their present or prospective business relations with Borrower, (ii) to prospective transferees or purchasers of any interest in the Loans, provided that they have entered into a comparable confidentiality agreement in favor of Borrower and have delivered a copy to Borrower, (iii) as required by law, regulations, rule or order, subpoena, judicial order or similar order, (iv) as may be required in connection with the examination, audit or similar investigation of Bank, and (v) as Bank may deem appropriate in connection with the exercise of any remedies hereunder. Confidential information hereunder shall not include information that either: (a) is in the public domain or in the knowledge or possession of Bank when disclosed to Bank, or becomes part of the public domain after disclosure to Bank through no fault of Bank; or (b) is disclosed to Bank by a third party, provided Bank does not have actual knowledge that such third party is prohibited from disclosing such information.

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date first above written.

HARMONIC LIGHTWAVES, INC. (doing business in California as DELAWARE HARMONIC LIGHTWAVES, INC.), a Delaware corporation

By _____
Title: _____

By _____
Title: _____

Address for Notices:

Attention: Marty McFarland, Controller
549 Baltic Way

Sunnyvale, CA, 94089-1140

SILICON VALLEY BANK

By _____
Title: _____

Address for Notices:

Attention: Scott Poland, Vice President
Communications and Online Services
3003 Tasman Drive
Santa Clara, CA 95054

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DEBTOR: HARMONIC LIGHTWAVES, INC. ("Borrower")
SECURED PARTY: SILICON VALLEY BANK ("Bank")

EXHIBIT A

The Collateral shall consist of all right, title and interest of Borrower, whether now existing or hereafter acquired or created and wherever located, in and to the following:

(a) All goods, equipment, machinery, fixtures, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing, and all attachments, accessories, accessions, replacements, substitutions, additions, and improvements to any of the foregoing;

(b) All inventory, merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products including such inventory as is temporarily out of Borrower's custody or possession or in transit and including any returns upon any accounts or other proceeds, including insurance proceeds, resulting from the sale or disposition of any of the foregoing and any documents of title representing any of the above;

(c) All contract rights, general intangibles, goodwill, trademarks, servicemarks, trade styles, trade names, patents, patent applications, leases, license agreements, franchise agreements, blueprints, drawings, purchase orders, customer lists, route lists, infringements, claims, computer programs, computer discs, computer tapes, literature, reports, catalogs, design rights, income tax refunds, payments of insurance and rights to payment of any kind;

(d) All accounts, contract rights, royalties, license rights and all other forms of obligations owing to Borrower, whether or not arising out of the sale or lease of goods, the licensing of technology or the rendering of services by Borrower, and whether or not earned by performance, and any and all credit insurance, guaranties, and other security therefor, as well as all merchandise returned to or reclaimed by Borrower;

(e) All documents, cash, deposit accounts, securities, investment property, letters of credit, certificates of deposit, instruments and chattel paper and Borrower's Books relating to the foregoing;

(f) All copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished; all trade secret rights, including all rights to unpatented inventions, know-how, operating manuals, license rights and agreements and confidential information; all mask work or similar rights available for the protection of semiconductor chips; all claims for damages by way of any past, present and future infringement of any of the foregoing; and

(g) All Borrower's Books relating to the foregoing and any and all claims, rights and interests in any of the above and all substitutions for, additions and accessions to and proceeds thereof.

EXHIBIT B

LOAN PAYMENT/LOAN ADVANCE TELEPHONE REQUEST FORM
DEADLINE FOR SAME DAY PROCESSING IS 3:00 P.M., P.S.T.

TO: CENTRAL CLIENT SERVICE DIVISION
FAX#: (408) _____

DATE: _____
TIME: _____

FROM: HARMONIC LIGHTWAVES, INC.

by _____
Name: _____
Title: _____
Telephone: _____

FROM ACCOUNT # _____ TO ACCOUNT# _____

REQUESTED TRANSACTION TYPE

REQUEST DOLLAR AMOUNT

PRINCIPAL INCREASE (Loan)

\$

PRINCIPAL PAYMENT (ONLY)

\$

INTEREST PAYMENT (ONLY)

\$

PRINCIPAL AND INTEREST (PAYMENT)

\$

OTHER INSTRUCTIONS:

All representations and warranties of Borrower stated in the Loan and Security Agreement are true, correct and complete in all material respects as of the date of the telephone request for and Loan confirmed by this Loan Request; provided that those representations and warranties expressly referring to another date shall be true, correct and complete in all material respects as of such date.

BANK USE ONLY:

TELEPHONE REQUEST:

The following person is authorized to request the loan payment transfer/loan advance on the advance designated account and is known to me.

Authorized Requester: _____

Authorized Signature (Bank)
Phone # _____

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EXHIBIT C

BORROWING BASE CERTIFICATE

TO: SILICON VALLEY BANK
FROM: HARMONIC LIGHTWAVES, INC. ("Borrower")

Commitment Amount: \$

ACCOUNTS RECEIVABLE

- 1. Accounts Receivable Book Value as of _____ \$ _____
- 2. Additions (please explain on reverse) \$ _____
- 3. TOTAL ACCOUNTS RECEIVABLE \$ _____

ACCOUNTS RECEIVABLE DEDUCTIONS (without duplication)

- 4. Amounts over 90 days due \$ _____
- 5. Balance of 50% over 90 day accounts \$ _____
- 6. Concentration Limits \$ _____
- 7. Foreign Accounts \$ _____
- 8. Governmental Accounts \$ _____

9. Contra Accounts	\$ _____
10. Promotion or Demo Accounts	\$ _____
11. Intercompany/Employee Accounts	\$ _____
12. Other (please explain on reverse)	\$ _____
13. TOTAL ACCOUNTS RECEIVABLE DEDUCTIONS	\$ _____

CALCULATION OF LOAN VALUE

14. Eligible Accounts (#3 minus #13)	\$ _____
15. LOAN VALUE OF ACCOUNTS (<u> </u> % of #14)	\$ _____

BALANCES

16. Maximum Loan Amount	\$ _____
17. Total Funds Available [Lesser of #16 or #15)]	\$ _____
18. Present balance owing on Line of Credit	\$ _____
19. Outstanding under Sublimits ()	\$ _____
20. RESERVE POSITION (#17 minus #18 and #19)	\$ _____

The undersigned represents and warrants that the foregoing is true, complete and correct, and that the information reflected in this Borrowing Base Certificate complies with the representations and warranties set forth in the Loan and Security Agreement between the undersigned and Silicon Valley Bank.

BORROWER: _____

By: _____
Authorized Signer

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COMMENTS (FOR BANK USE ONLY):

Received By: _____

Date: _____

Reviewed By: _____

Compliance Status: Yes / No _____

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EXHIBIT C

COMPLIANCE CERTIFICATE

TO: SILICON VALLEY BANK
FROM: HARMONIC LIGHTWAVES, INC. ("Borrower")

The undersigned authorized officer of the above Borrower hereby certifies that in accordance with the terms and conditions of the Loan and Security Agreement between Borrower and Bank (the "Agreement"), (i) Borrower is in complete compliance for the period ending _____ with all required covenants except as noted below and (ii) all representations and warranties of Borrower stated in the Agreement are true and correct in all material respects as of the date hereof. Attached herewith are the required documents supporting the above certification. The Officer further certifies that these are prepared in accordance with Generally Accepted Accounting Principles (GAAP) and are consistently applied from one period to the next except as explained in an accompanying letter or footnotes. The Officer expressly acknowledges that no borrowings may be requested by Borrower at any time or date of determination that Borrower is not in compliance with any of the terms of the Agreement, and that such compliance is determined not just at the date this certificate is delivered.

PLEASE INDICATE COMPLIANCE STATUS BY CIRCLING YES/NO UNDER "COMPLIES" COLUMN.

REPORTING COVENANT	REQUIRED	COMPLIES
-----	-----	-----
Monthly financial statements	Monthly within 30 days	Yes
Annual (CPA Audited)	FYE within 90 days	No

FINANCIAL COVENANT	REQUIRED	ACTUAL	COMPLIES
Maintain on a Monthly Basis: (unless otherwise stated)			
Minimum Quick Ratio	1.25:1.00	_____:1.0	Yes No
Maximum Liabilities/ Net Worth Ratio	0.75:1.00	_____:1.0	Yes No
Profitability	\$_____	\$_____	Yes No

Sincerely,

SIGNATURE

Date: _____

TITLE

BANK USE ONLY

Received By: _____

Date: _____

Reviewed By: _____

Compliance Status: Yes / No

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DISBURSEMENT REQUEST AND AUTHORIZATION

TO: SILICON VALLEY BANK
FROM: HARMONIC LIGHTWAVES, INC. ("Borrower")

LOAN TYPE. This is a Variable Rate, Revolving Line of Credit of a principal amount up to \$_____.

PRIMARY PURPOSE OF LOAN. The primary purpose of this loan is for business.

SPECIFIC PURPOSE. The specific purpose of this loan is: _____.

DISBURSEMENT INSTRUCTIONS. Borrower understands that no loan proceeds will be disbursed until all of Bank's conditions for making the loan have been satisfied. Please disburse the loan proceeds as follows:

Amount paid to Borrower directly:	\$_____
Undisbursed Funds	\$_____
Principal	\$_____

CHARGES PAID IN CASH. Borrower has paid or will pay in cash as agreed the following charges:

Prepaid Finance Charges Paid in Cash: \$_____

\$_____	Loan Fee
\$_____	Accounts Receivables Audit

Other Charges Paid in Cash:	\$_____
\$_____	UCC Search Fees
\$_____	UCC Filing Fees
\$_____	PATENT FILING FEES
\$_____	TRADEMARK FILING FEES
\$_____	COPYRIGHT FILING FEES
\$_____	OUTSIDE COUNSEL FEES AND EXPENSES
[ESTIMATE, DO NOT LEAVE BLANK]	

Total Charges Paid in Cash \$_____

AUTOMATIC PAYMENTS. Borrower hereby authorizes Bank automatically to deduct from Borrower's account numbered _____ the amount of any loan payment. If the funds in the account are insufficient to cover any payment, Bank shall not be obligated to advance funds to cover the payment.

FINANCIAL CONDITION. BY SIGNING THIS AUTHORIZATION, BORROWER REPRESENTS AND

WARRANTS TO BANK THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND CORRECT AND THAT THERE HAS BEEN NO ADVERSE CHANGE IN BORROWER'S FINANCIAL CONDITION AS DISCLOSED IN BORROWER'S MOST RECENT FINANCIAL STATEMENT TO BANK. THIS AUTHORIZATION IS DATED AS OF _____, 19 ____.

BORROWER:

By: _____
Authorized Officer

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Mrs. Susan Wang
Bob Aeschliman, Esq.
Solectron Corporation
847 Gibraltar Drive
Milpitas, CA 95035

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LOAN MODIFICATION AGREEMENT

This Loan Modification Agreement is entered into as of June 10, 1999, by and between Harmonic, Inc. (formerly known as Harmonic Lightwaves, Inc.) ("Borrower") and Silicon Valley Bank ("Bank").

1. DESCRIPTION OF EXISTING INDEBTEDNESS: Among other indebtedness which may be owing by Borrower to Bank, Borrower is indebted to Bank pursuant to, among other documents, a Second Amended and Restated Loan and Security Agreement, dated March 5, 1999, as may be amended from time to time, (the "Loan Agreement"). The Loan Agreement provided for, among other things, a Revolving Commitment in the original principal amount of Ten Million Dollars (\$10,000,000). Defined terms used but not otherwise defined herein shall have the same meanings as in the Loan Agreement.

Hereinafter, all indebtedness owing by Borrower to Bank shall be referred to as the "Indebtedness."

2. DESCRIPTION OF COLLATERAL AND GUARANTIES. Repayment of the indebtedness is secured by the Collateral as described in the Loan Agreement and that certain Intellectual Property Security Agreement dated March 5, 1999. Bank hereby releases its security interest in the Collateral, including Intellectual Property pursuant to the terms of this Loan Modification Agreement.

Hereinafter, the above-described security documents and guaranties, together with all other documents securing repayment of the indebtedness shall be referred to as the "Security Documents". Hereinafter, the Security Documents, together with all other documents evidencing of securing the indebtedness shall be referred to as the "Existing Loan Documents".

3. DESCRIPTION OF CHANGE IN TERMS.

A. Modification(s) to Loan Agreement

1. The following defined terms set forth in Section 1.1 entitled "Definitions" are hereby amended to read as follows:

"Current Liabilities" means, as of any applicable date, all amounts that should, in accordance with GAAP, be included as current liabilities on the consolidated balance sheet of Borrower and its Subsidiaries, at such date, plus, to the extent not already included therein, all outstanding Revolving Loans and the current portion of the outstanding Equipment Loans and Existing Equipment Loans, and all other indebtedness that is payable upon demand or within one year from the date of determination thereof unless such indebtedness is renewable or extendable at the option of Borrower or any Subsidiary to a date more than one year from the date of determination, but excluding Subordinated Debt.

"Eligible Foreign Accounts" means Accounts with respect which the account debtor is Siemens A.G., a German corporation, or

other account debtors, if any, as may be from time to time approved in writing by Bank, provided such Eligible Foreign Accounts do not exceed \$500,000.

2. Sub-section (a) of Section 6.3 entitled "Financial Statements, Reports, Certificates" is hereby amended to read as follows:

....(a) as soon as available, but in any event within 30 days after the end of each quarter, a company prepared consolidated balance sheet and income statement covering Borrower's consolidated operations during such period, in a form and certified by an officer of Borrower reasonably acceptable to Bank; ...

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3. The second paragraph of Section 6.3 entitled "Financial Statements, Reports, Certificates" is hereby amended to read as follows:

Within 30 days after the last day of each quarter, Borrower shall deliver to Bank a Borrowing Base Certificate signed by a Reasonable Officer, together with aged listings of accounts receivable and accounts payable.

4. The third paragraph of Section 6.3 entitled "Financial Statements, Reports, Certificates" is hereby amended to read as follows:

Within 30 days after the last day of each quarter, Borrower shall deliver to Bank with the quarterly financial statements a Compliance Certificate signed by a Responsible Officer.

5. Section 6.8 entitled "Quick Ratio" and Section 6.9 entitled "Debt-Net Worth Ratio" are hereby amended in part to provide for Borrower's quarterly (rather than monthly) compliance with said covenants.

B. Release of Security Interest

1. Bank, by its acceptance hereof, agrees to release its security interest in the Collateral, including Intellectual Property, provided, however, no Event of Default has occurred and is continuing under any of the Existing Loan Documents. All parties to this Loan Modification Agreement acknowledge and agree that Bank's release of its security interest in the Collateral, including Intellectual Property in no way shall limit or impair Bank's rights against Borrower.

4. CONSISTENT CHANGES. The Existing Loan Documents are hereby amended wherever necessary to reflect the changes described above.

5. NO DEFENSES OF BORROWER. Borrower (and each guarantor and pledgor signing below) agrees that, as of the date hereof, it has no defenses against the obligations to pay any amounts under the Indebtedness.

6. CONTINUING VALIDITY. Borrower (and each guarantor and pledgor signing below) understands and agrees that in modifying the existing Indebtedness, Bank is relying upon Borrower's representations, warranties, and agreements, as set forth in the Existing Loan Documents. Except as expressly modified pursuant to this Loan Modification Agreement, the terms of the Existing Loan Documents remain unchanged and in full force and effect. Bank's agreement to modifications to the existing Indebtedness pursuant to this Loan Modification Agreement in no way shall obligate Bank to make any future modifications to the Indebtedness. Nothing in this Loan Modification Agreement shall constitute a satisfaction of the Indebtedness. It is the intention of Bank and Borrower to retain as liable parties all makers and endorsers of Existing Loan Documents, unless the party is expressly released by Bank in writing. No maker, endorser, or guarantor will be released by virtue of this Loan Modification Agreement. The terms of this paragraph apply not only to this Loan Modification Agreement, but also to all subsequent loan modification agreements.

This Loan Modification Agreement is executed as of the date first written above.

BORROWER:

HARMONIC, INC. (f/k/a Harmonic Lightwaves, Inc.)

By: /s/ ROBIN N. DICKSON

Name: Robin N. Dickson

Title: C.F.O.

BANK:

SILICON VALLEY BANK

By: /s/ SCOTT POLAND

Name: Scott Poland

Title: SVP

AMENDMENT
TO SECOND AMENDED AND RESTATED
LOAN AND SECURITY AGREEMENT

This Amendment to Second Amended and Restated Loan and Security Agreement (the "Amendment") is entered into as of March 24, 2000, by and between Silicon Valley Bank ("Bank") and Harmonic, Inc. (the "Borrower").

RECITALS

Borrower and Bank are parties to that certain Second Amended and Restated Loan and Security Agreement dated as of March 5, 1999, as amended from time to time, including as amended by a Loan Modification Agreement dated as of June 10, 1999 (the "Agreement"). The parties desire to amend the Agreement in accordance with the terms of this Amendment.

NOW, THEREFORE, the parties agree as follows:

1. Section 1.1 of the Agreement is amended by amending the following defined terms:

"Revolving Maturity Date" means July 24, 2000.

2. Section 2.1.1(c) is amended to read as follows: "Interest Rate. Except as set forth in Section 2.3(b), the outstanding principal amount of the Revolving Loans shall bear interest, on the average daily balance thereof, at a per annum rate equal to the Prime Rate."

3. Section 2.1.3(b) is amended to read as follows: "Interest Rate. Except as set forth in Section 2.3(b), the outstanding principal amount of the Equipment Loans and the Existing Equipment Loans shall bear interest, on the average daily balance thereof, at a per annum rate equal to One Half (0.5) percentage point above the Prime Rate. Accrued interest on each such Loan shall be payable monthly on each Payment Date and on the date the final installment of principal on the Equipment Loans is due."

4. As a condition to the effectiveness of this Amendment, Borrower shall pay Bank an amount equal to Six Thousand Six Hundred Sixty Seven Dollars (\$6,667) plus the Bank Expenses incurred in connection with the preparation of this Amendment.

5. Borrower represents and warrants that the Representations and Warranties contained in the Agreement are true and correct as of the date of this Amendment, that no Event of Default has occurred and is continuing, and that Borrower has no defenses against the obligations to pay any Obligations. Nothing in this Amendment shall constitute a satisfaction of any Obligations.

Unless otherwise defined, all capitalized terms in this Amendment shall be as defined in the Agreement. Except as amended, the Agreement remains in full force and effect as of the date of this Amendment.

6. This Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one instrument.

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IN WITNESS WHEREOF, the undersigned have executed this Amendment as of the first date above written.

HARMONIC, INC.

By:

Title:

SILICON VALLEY BANK

By:

Title:

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EXHIBIT 23.1

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (Nos. 33-94138, 333-38025, 333-44265, 333-65051 and 333-86649) of Harmonic Inc. of our report dated January 18, 2000, which appears on page 29 of this Annual Report on Form 10-K.

PricewaterhouseCoopers LLP

San Jose, California
March 28, 2000

<ARTICLE> 5
<MULTIPLIER> 1,000

	12-MOS
<FISCAL-YEAR-END>	DEC-31-1999
<PERIOD-START>	JAN-01-1999
<PERIOD-END>	DEC-31-1999
<CASH>	24,822
<SECURITIES>	64,877
<RECEIVABLES>	36,732
<ALLOWANCES>	1,311
<INVENTORY>	35,310
<CURRENT-ASSETS>	169,700
<PP&E>	33,890
<DEPRECIATION>	18,959
<TOTAL-ASSETS>	185,693
<CURRENT-LIABILITIES>	40,284
<BONDS>	0
<PREFERRED-MANDATORY>	0
<PREFERRED>	0
<COMMON>	148,582
<OTHER-SE>	(3,694)
<TOTAL-LIABILITY-AND-EQUITY>	185,693
<SALES>	184,075
<TOTAL-REVENUES>	184,075
<CGS>	103,470
<TOTAL-COSTS>	103,470
<OTHER-EXPENSES>	0
<LOSS-PROVISION>	0
<INTEREST-EXPENSE>	(2,556)
<INCOME-PRETAX>	31,573
<INCOME-TAX>	7,893
<INCOME-CONTINUING>	0
<DISCONTINUED>	0
<EXTRAORDINARY>	0
<CHANGES>	0
<NET-INCOME>	23,680
<EPS-BASIC>	0.84
<EPS-DILUTED>	0.76