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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
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FORM 10-K

(MARK ONE)

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934
FOR THE FISCAL YEAR ENDED DECEMBER 31, 1996

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

COMMISSION FILE NO. 0-25826
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)
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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 [X] 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 March 11, 1997, the aggregate market value of the voting stock
held by non-affiliates of the Registrant was \$156,102,407. 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 10,215,677 at March 11, 1997.

DOCUMENTS INCORPORATED BY REFERENCE

Table with 2 columns: DOCUMENT, LOCATION IN FORM 10-K. Row 1: 1996 Annual Report to Stockholders (pages 17-36), Parts II and IV

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The Board Compensation Committee Report and the Performance Graph to be included with the 1997 Proxy Statement shall not be deemed to be "soliciting material" or to be "filed" with the Commission or otherwise incorporated by reference into this report.

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PART I

ITEM 1. BUSINESS

Harmonic Lightwaves ("Harmonic" or the "Company") develops, manufactures and markets highly integrated fiber optic transmission, digital headend and element management systems for delivering interactive services over broadband networks. The Company's products include optical transmitters, nodes, receivers, digital video compression and modulation equipment, and element management hardware and software. These products are used by major communications providers, such as cable television operators, in bi-directional networks. Harmonic was incorporated in June 1988 in California. In May 1995, Harmonic reincorporated into Delaware and completed its initial public offering.

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Actual results could differ materially from those projected in the forward-looking statements as a result of a number of factors, including those set forth under "Factors That May Affect Future Results of Operations" and elsewhere in this Annual Report on Form 10-K.

INDUSTRY BACKGROUND

The introduction and deployment of fiber optic technology in cable television networks has significantly increased network quality and reliability. Fiber optic cables provide significant performance advantages compared to coaxial cables, including longer transmission distance, greater channel capacity, reduced cable size and weight, and resistance to interference from external electronic signals. By eliminating the need for amplifiers in the trunk section of a traditional coax network, fiber increases the reliability of a cable television network and the quality of the signal, while substantially lowering network installation and maintenance cost. The higher bandwidth of fiber can increase capacity to up to 110 analog channels on a typical hybrid fiber coax ("HFC") network and, together with the removal of amplifiers, facilitates the two-way communication necessary for the provision of advanced interactive services. As a result, HFC architectures are being increasingly adopted on a worldwide basis. In addition to upgrading network infrastructure with fiber optics, multiple system operators (MSOs) are beginning to introduce digital transmission capability. Digital compression technology, which will permit the system operator to provide new integrated voice, video and data services over HFC networks, is now becoming available. Transmissions in digital format are expected to allow operators to provide subscribers up to several hundred channels of high-quality television, as well as high-speed data communications, Internet access and telephony services.

Cable television service is currently available to approximately 90% of all U.S. households. Accordingly, growth in the U.S. cable television equipment market is being driven primarily by the need to upgrade and rebuild existing cable television networks to provide improved and expanded services. Internationally, because of the relatively low availability of cable television networks and the stringent network performance criteria which have been imposed by many foreign governments, significant investment in advanced network infrastructure will be required to bring cable television service to large segments of the population. These trends are expected to contribute to the increased use of fiber optic transmission systems in the future.

Cable television operators are facing increasing competition worldwide as a result of recent and proposed regulatory reform. The communications environment in the United States is likely to be more competitive as a result of the

Telecommunications Act of 1996 ("the Telecom Act"). Historically, U.S. local exchange carriers, such as the regional Bell operating companies (RBOCs), have been prohibited from transmitting video programming in their local service areas. Likewise, U.S. cable television operators have been prohibited by federal regulation from offering telephony services. The Telecom Act permits cable television operators and local exchange carriers to enter each other's markets and to provide other services, such as high-speed data communications. To address this more competitive environment, the Company believes that cable television operators will be under increasing pressure to upgrade and rebuild their networks.

In addition, the emergence of direct broadcast satellite (DBS) systems and other alternative video programming delivery systems has already subjected cable television operators to increasing competitive

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pressures. DBS systems broadcast compressed digital video over satellite to a receiving dish located at the subscriber's home and offer consumers up to 200 channels of video programming. The continued penetration of DBS is expected to put increasing pressure on cable television operators to provide additional programming and better quality service. In addition, other competitive technologies have emerged to support the delivery of video programming.

Government initiatives and deregulation of telecommunications markets abroad have fostered substantial growth and competition in many foreign cable television markets. Because of the early stage of development of many foreign cable television markets and stringent system performance criteria established by foreign government regulations, the provision of cable television service in many foreign countries will require significant investment in advanced video transmission equipment. The major U.S. MSOs and RBOCs have used this opportunity to expand their presence internationally, through partnerships, joint ventures and other initiatives.

The competitive pressures to upgrade cable television networks and the corresponding capital requirements have led to significant cable television industry consolidation in recent years. The upgrade of existing networks requires substantial expenditures and the replacement of significant parts of the transmission network. As a result, MSOs have sought to increase their size in order both to achieve the economies of scale made possible by the ownership of adjacent systems ("clustering") and to improve their financial strength. This has been accomplished largely through acquisitions of smaller MSOs and independent cable television operators, many of which cannot afford significant system upgrades. A number of sizable acquisitions and system exchanges by MSOs has been completed during the past several years.

In order to offer the increased capabilities needed to provide these advanced services, MSOs are expected to continue to upgrade their systems by incorporating fiber optic technology and digital transmission capability. Similarly, telephone companies are expected to be under competitive pressure to upgrade their copper local loop systems, which have limited video and data communication capabilities, to incorporate fiber optic technology. In contrast to the past, when consumers were generally limited to a single choice for their video service and a single choice for local telephone service, consumers are expected to be able to choose between two or more providers of highly integrated services in the future. The factors affecting the selection of services in the future are expected to include network reliability, price, the number of television channels offered, the speed of data transmission, interactivity, and picture, sound and data quality.

#### PRODUCTS

Harmonic develops, manufactures and markets highly integrated fiber optic transmission, digital headend and element management systems for delivering interactive services over broadband networks. The Company has applied its technical strengths in optics and electronics, including expertise with lasers, modulators, predistortion linearizers and compression technology, to produce products which provide enhanced network reliability and allow broadband service providers to deliver advanced services, including two-way interactive services. The Company's products incorporate control systems employing internally developed embedded firmware and software to facilitate a high degree of system integration. The "plug and play" design philosophy and communication structure employed in the Company's products enhance ease of installation.

## Optical Transmitters

The Company offers PWRLink transmitters, YAGLink transmitters and MAXLink transmitters and optical amplifiers for a wide range of optical transmission requirements.

**PWRLink Transmitters.** The PWRLink series of optical transmitters incorporates DFB semiconductor lasers and provides optical transmission primarily for use at a headend for local distribution to optical nodes and for narrowcasting (the transmission of programming to select subscribers within one system).

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

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

**YAGLink Transmitters.** The Company's YAGLink transmitters are high-powered 1310nm optical transmitters designed primarily for the transmission of optical signals over long distances, such as between headends on a redundant ring network, or in dense urban environments where a single headend supports a very large number of optical nodes. The increasing acceptance among cable operators of 1550nm transmitters for broadcast transmission has led to a decline in demand for YAGLink transmitters. This has resulted in a decrease in sales of YAGLink transmitters in 1996 and the Company expects sales of YAGLink transmitters to continue to decline.

## Optical Node Receivers

The Company's optical node receivers convert optical signals received from the transmitters into RF signals for transmission to the home via coaxial cable. Harmonic's receivers cause low levels of distortion, which maintain the high performance levels provided by the Company's optical transmitters. The receivers are installed in rack mount or strand mount housings, each of which can accommodate return path transmitters and transponders in addition to the optical node receiver.

## Return Path and Element Management Products

The Company offers a number of return path transmitters, return path receivers and element management hardware and software to provide two way transmission capability to enable the network operator to monitor and control the entire transmission network.

**Return Path Transmitters.** The Company's return path transmitters send 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.

**Return Path Receivers.** Harmonic's return path receivers operate at the headend to receive return path optical transmission from the return path transmitters.

**Element Management System (EMS).** Harmonic's EMS consists of transponders and element management software. The transponders operate in broadband networks to capture measurement data. Harmonic's Windows-based EMS software enables the broadband service operator to monitor and control the entire HFC network from a central office or remote locations. The Company's EMS software is designed to be integrated into larger network management systems through the use of simple network management protocol (SNMP).

## Digital Headend Products

The company has recently announced the introduction of its initial products

for digital headend applications.

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

Modulators. Harmonic's modulators accept digital signals for modulation on to a radio frequency (RF) carrier for transmission over a broadband network.

These products for headend applications have not yet been shipped to customers and are not expected to be shipped in volume until the fall of 1997. There can be no assurance that successful development of these products will be completed in a timely manner, if at all, that they will be successfully manufactured in volume, or that they will achieve market acceptance. See "Factors That May Affect Future Results of Operations -- Rapid Technological Change."

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In 1996, 1995 and 1994, sales of optical transmitters accounted for approximately 71%, 63%, and 72%, respectively, of net sales. In 1996, 1995 and 1994, sales of optical node receivers accounted for approximately 8%, 12%, and 15%, respectively, of net sales.

#### SALES AND MARKETING

Harmonic markets its products worldwide through its own direct sales force as well as through system integrators and distributors. The Company's direct sales force supports domestic and international sales and operates from the Company's headquarters in Sunnyvale, California and from several sales offices. Harmonic has adopted a strategy to sell to major domestic customers through its own direct sales force and expects that domestic distributor and OEM revenues will be a smaller percentage of net sales in the future. In this regard, net sales to ANTEC Corporation ("ANTEC"), a leading manufacturer, system integrator and distributor of cable television equipment, and one of the Company's largest customers since 1992, are expected to be insignificant in the future. In September 1996, Harmonic and ANTEC terminated an agreement pursuant to which the Company manufactured ANTEC's LaserLink II(TM) DFB transmitter.

Historically, the majority of Harmonic's sales have been to relatively few customers, and Harmonic expects this customer concentration to continue in the foreseeable future, notwithstanding the Company's strategy to sell to domestic customers through its own direct sales force. In 1996, sales to Tratec (the Company's U.K. distributor), Capella (the Company's Canadian distributor), and ANTEC accounted for 15%, 15%, and 13%, respectively, of net sales. In 1995, sales to Tratec, ANTEC and Capella accounted for 22%, 15% and 15%, respectively, of net sales. In 1994, sales to ANTEC, Capella, Siemens, Tratec and Scientific-Atlanta, Inc. accounted for 22%, 15%, 14%, 12% and 12%, respectively, of net sales. No other customer accounted for more than 10% of the Company's net sales in 1996, 1995 or 1994. Harmonic's products have been purchased by most of the ten largest domestic MSOs and by a number of large cable television operators outside the United States. These end users include Time-Warner, Inc., Cox Communications, Inc., and Tele-Communications, Inc. ("TCI"), in the U.S., Rogers Communications in Canada, CableTel and TeleWest in the U.K., Wharf Cable in Hong Kong and VCC in Argentina. The loss of a significant customer or any reduction in orders by any significant customer, or the failure of the Company to qualify its products with a significant MSO could adversely affect the Company's business and operating results.

Sales to customers outside of the United States in 1996, 1995 and 1994 represented approximately 57%, 65% and 57% of net sales, respectively. Harmonic expects international sales to continue to account for a substantial portion of its net sales for the foreseeable future. International sales are made primarily to distributors, which are generally responsible for importing the products, installation and technical support and service to cable television operators within their territory. International sales are subject to a number of risks, including changes in foreign government regulations and telecommunications standards, export license requirements, tariffs and taxes, 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. There can be no assurance that international markets will continue to develop or that the

Company will receive future orders to supply its products in international markets at rates equal to or greater than those experienced in recent periods.

#### MANUFACTURING AND SUPPLIERS

The Company's manufacturing processes consist primarily of integration and final assembly and test, performed by highly trained personnel employing technologically advanced electronic equipment and proprietary test programs. The manufacturing of the Company's products and subassemblies is a complex process and there can be no assurance that the Company will not experience production problems or manufacturing delays in the future. Because the Company utilizes its own manufacturing facility for this production, and because such manufacturing capabilities are not readily available from third parties, any interruption in operations could have a material adverse effect on the Company's business and operating results.

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The Company uses third party contract manufacturers to assemble certain standard parts for its products, including such items as printed circuit boards, metal frames and power supplies. The Company intends to subcontract an increasing number of tasks to third parties in the future. The Company's increasing reliance on subcontractors involves several risks, including a potential inability to obtain an adequate supply of components on a timely basis.

Certain components and subassemblies necessary for the manufacture of the Company's products are obtained from a sole supplier or a limited group of suppliers. In particular, the Company relies on Fujitsu as a major source of DFB lasers for its PWRLink and return path transmitters, for which there are limited alternative suppliers. In addition, the optical modulators used in the Company's MAXLink and YAGLink products are currently available only from Uniphase Corporation. Although the Company has qualified alternative suppliers for its lasers, in the event that the supply of optical modulators or lasers is interrupted for any reason, products from alternative suppliers are unlikely to be immediately available in sufficient volume to meet the Company's production needs. Further, certain key elements of the Company's digital headend products are expected to be provided initially by a sole foreign supplier. 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 the Company attempts to minimize its supply risks by holding safety stocks and continuously evaluating other sources, any interruption in supply could have a material adverse effect on the Company's business and operating results. The Company does not maintain long-term agreements with any of its suppliers. While the Company has historically been able to obtain adequate supplies of components in a timely manner from its principal suppliers, there can be no assurance that the Company will be able to obtain such 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 the Company's products, the Company could be unable to manufacture certain products in a quantity sufficient to meet its customers' demand. Any inability to obtain adequate deliveries of key components could affect the Company's ability to ship its products on a timely basis, which could damage relationships with its current and prospective customers and could have a material adverse effect on the Company's business and operating results.

#### INTELLECTUAL PROPERTY

The Company currently holds nine United States patents and nine foreign patents, and has a number of patent applications pending. Although the Company attempts to protect its intellectual property rights through patents, trademarks, copyrights, maintaining certain technology as trade secrets and other measures, there can be no assurance that any patent, trademark, copyright or other intellectual property right owned by the Company will not be invalidated, circumvented or challenged, such intellectual property right will provide competitive advantages to the Company or that any of the Company's pending or future patent applications will be issued with the scope of the claims sought by the Company, if at all. There can be no assurance that others will not develop technologies that are similar or superior to the Company's technology, duplicate the Company's technology or design around the patents owned by the Company. In addition, effective patent, copyright and trade secret protection may be unavailable or limited in certain foreign countries in which

the Company does business or intends to do business in the future.

The Company believes that the future success of its business will depend on its ability to translate the technological expertise and innovation of its personnel into new and enhanced products. The Company generally enters into confidentiality or license agreements with its employees, consultants, vendors and customers as needed, and generally limits access to and distribution of its proprietary information. Nevertheless, there can be no assurance that the steps taken by the Company will prevent misappropriation of its technology. In addition, the Company has taken in the past, and may take in the future, legal action to enforce the Company's patents and other intellectual property rights, to protect the Company's 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 have a material adverse effect on the Company's business and operating results.

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In order to successfully develop and market its recently announced products for digital headend applications, the Company 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, there can be no assurance that such agreements will be negotiated on terms acceptable to the Company, or at all. The failure to enter into technology development or licensing agreements, when necessary, could limit the Company's ability to develop and market new products and could have a material adverse effect on the Company's business and operating results.

As is common in its industry, the Company has from time to time received notification from other companies of intellectual property rights held by those companies upon which the Company's 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 have a material adverse effect on the Company's business operating results and financial condition. If the Company were found to be infringing on the intellectual property rights of any third party, the Company 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 the Company or that failure to obtain a license would not adversely affect the Company's operating results.

#### BACKLOG

The Company schedules production of its systems based upon its backlog, informal commitments from customers and sales projections. The Company's backlog consists of firm purchase orders by customers for delivery within the next twelve months. At December 31, 1996, order backlog amounted to \$9.8 million, compared to \$4.8 million at December 31, 1995. 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 of its major end-users, the Company's backlog at December 31, 1996 or any other date, is not necessarily indicative of actual sales for any succeeding period.

The Company has excluded from its December 31, 1996 backlog significant orders from TCI which have been on hold since the Company received a letter from TCI dated October 17, 1996 asking it to stop product shipments until further notice. Based on published reports, the Company believes that it was one of approximately thirty equipment vendors to receive such a letter. The Company can not presently estimate when, if ever, it will resume shipments to TCI.

#### COMPETITION

The market for cable television transmission equipment is extremely competitive and is characterized by rapid technological change. The principal competitive factors in this market include product performance, reliability,

price, breadth of product line, network management capabilities, sales and distribution capability, technical support and service, relationships with cable television operators and general industry and economic conditions. Certain of these factors are outside of the Company's control.

The Company's competitors for its fiber optic transmission products include established suppliers of cable television and telecommunications equipment such as ADC Telecommunications, ANTEC, Lucent Technologies, General Instrument, Philips and Scientific-Atlanta, as well as a number of smaller, more specialized companies. For digital headend products, the Company's competitors are expected to include many of the same competitors as in fiber optic transmission products, and may also include new competitors. Most of the Company's competitors are substantially larger and have greater financial, technical, marketing and other resources than the Company. Many of such large competitors are in a better position to withstand any significant reduction in capital spending by cable television operators and other broadband service

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providers. In addition, many of the Company's competitors have more long standing and established relationships with domestic and foreign MSOs than does the Company.

#### RESEARCH AND DEVELOPMENT

The Company has historically devoted a significant amount of its resources to research and development. Research and development expenses in 1996, 1995 and 1994 were \$9.2 million, \$6.1 million, and \$3.2 million, respectively. The Company expects that research and development expenses will continue to increase in the future.

In 1994, the Company established a subsidiary in Israel in order to develop technologies and products for digital video communication systems. The Company has received a grant of \$560,000, to be funded over an expected period of 31 months, from the BiNational Research & Development (BIRD) Foundation, a joint U.S.-Israel program to foster research and development activities beneficial to both countries. As of December 31, 1996, the Company had recognized approximately \$440,000 of this grant as a credit to research and development expense. The full funding of the grant is conditioned upon the completion of the scope of work outlined in the funding application by certain deadlines. If the Company sells products which incorporate the technology developed in this program, the Company will be obligated to repay the grant by means of the payment of royalties to the BIRD Foundation. Royalties payable pursuant to the grant are capped at an aggregate of 150% of the original grant.

Any success of the Company in designing, developing, manufacturing and selling new and/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 and effective manufacturing and assembly processes and sales and marketing. Because of the complexity inherent in such research and development efforts, there can be no assurance that the Company will successfully develop new products, or that new products developed by the Company will achieve market acceptance. Any failure of the Company to successfully develop and introduce new products could have a material adverse effect on the Company's business and operating results.

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

##### Potential Fluctuations in Future Operating Results

The Company's operating results have fluctuated and may continue to fluctuate in the future, on an annual and a quarterly basis, as a result of a number of factors, many of which are outside of the Company's control, including the level of capital spending in the cable television industry, changes in the regulatory environment, changes in market demand, the timing of customer orders, competitive market conditions, lengthy sales cycles, new product introductions by the Company or its competitors, market acceptance of new or existing products, the cost and availability of components, the mix of the Company's customer base and sales channels, the mix of products sold, development of custom products, the level of international sales and general economic conditions. The Company 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 the Company'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 the Company's operating results. If sales are below expectations in any given quarter, the adverse impact of the shortfall on the Company's operating results may be magnified by the Company's inability to adjust spending to compensate for the shortfall.

#### Dependence on Key Customers and End Users

Historically, a substantial majority of the Company's sales have been to relatively few customers. Sales to the Company's ten largest customers in 1996, 1995 and 1994 accounted for approximately 72%, 80% and 88%, respectively, of its net sales. Due in part to the consolidation of ownership of domestic cable television systems, the Company expects that sales to relatively few customers will continue to account for a significant

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percentage of net sales for the foreseeable future. Harmonic has adopted a strategy to sell to major domestic customers through its own direct sales force and expects that domestic OEM and distributor revenues will be a smaller percentage of net sales in the future. In this regard, net sales to ANTEC in the fourth quarter of 1996 were less than 10% of net sales, and are expected to be insignificant in the future. Substantially all of the Company's sales are made on a purchase order basis, and none of the Company's customers has entered into a long-term agreement requiring it to purchase the Company's products. The loss of, or any reduction in orders from, a significant customer would have a material adverse effect on the Company's business and operating results.

#### Dependence on Cable Television Industry Capital Spending

To date, substantially all of the Company's sales have been derived, directly or indirectly, from sales to cable television operators. Demand for the Company's products depends to a significant extent upon the magnitude and timing of capital spending by cable television operators for constructing, rebuilding or upgrading their systems. The capital spending patterns of cable television operators are dependent on a variety of factors, including access to financing, cable television operators' annual budget cycles, the status of federal, local and foreign government regulation of telecommunications and television broadcasting, overall demand for cable television services, competitive pressures (including the availability of alternative video delivery technologies such as satellite broadcasting), discretionary customer spending patterns and general economic conditions. The Company believes that the consolidation of ownership of domestic cable television systems, by acquisition and system exchanges, together with uncertainty over regulatory issues, particularly the debate over the provisions of the Telecommunications Act of 1996, caused delays in capital spending by major domestic MSOs during the second half of 1995 and first quarter of 1996. Although the Act became law in February 1996 and the Company believes that its provisions will result in increased capital expenditures in the telecommunications industry, there can be no assurance that capital spending by domestic MSOs will increase in the near future, or at all, or that Harmonic's sales will benefit. 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.

#### Rapid Technological Change

The market for the Company's products is relatively new, making it difficult to accurately predict the market's future growth rate, size and technological direction. In view of the evolving nature of this market, there can be no assurance that cable television operators, telephone companies or other suppliers of broadband services will not decide to adopt alternative architectures or technologies that are incompatible with the Company's products, which would have a material adverse effect on the Company's business and operating results.

The broadband communications markets are characterized by continuing technological advancement. To compete successfully, the Company must design, develop, manufacture and sell new products that provide increasingly higher levels of performance and reliability. As new markets for broadband

communications equipment continue to develop, the Company must successfully develop new products for these markets in order to remain competitive. For example, to compete successfully in the future, the Company believes that it must successfully develop and introduce products that will facilitate the processing and transmission of digital signals over optical networks. While the Company has announced and demonstrated initial products for digital applications, there can be no assurance that the Company will successfully complete development of, or successfully introduce, products for digital applications, or that such products will achieve commercial acceptance. In addition, in order to successfully develop and market its planned products for digital applications, the Company 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, there can be no assurance that such agreements will be negotiated on terms acceptable to the Company, or at all. The failure to enter into technology development or licensing agreements, when necessary, could limit the Company's ability to develop and market new products and could have a material adverse effect on the Company's business and operating results.

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The failure of the Company to successfully develop and introduce new products that address the changing needs of the broadband communications market could have a material adverse effect on the Company's business and operating results. In addition, there can be no assurance that the successful introduction by the Company of new products will not have an adverse effect on the sales of the Company's existing products. For instance, an emerging trend in the domestic market toward narrowcasting (targeted delivery of advanced services to small groups of subscribers) is causing changes in the network architectures of some cable operators. This may have the effect of changing the Company's product mix toward lower price transmitters, which could adversely affect the Company's gross margins.

#### Risks of International Operations

Sales to customers outside of the United States in 1996, 1995 and 1994 represented 57%, 65% and 57% of net sales, respectively, and the Company expects that international sales will continue to represent a substantial portion of its net sales for the foreseeable future. In addition, the Company has an Israeli subsidiary that engages primarily in research and development. International operations are subject to a number of risks, including changes in foreign government regulations and telecommunications standards, export license requirements, tariffs and taxes, other trade barriers, fluctuations in currency exchange rates, difficulty in collecting accounts receivable, difficulty in staffing and managing foreign operations and political and economic instability. While international sales are typically denominated in U.S. dollars, fluctuations in currency exchange rates could cause the Company's products to become relatively more expensive to customers in a particular country, leading to a reduction in sales or profitability in that country. Payment cycles for international customers are typically longer than those for customers in the United States. There can be no assurance that foreign markets will continue to develop or that the Company will receive additional orders to supply its products for use in foreign broadband systems.

#### EMPLOYEES

As of December 31, 1996, the Company employed a total of 215 people, including 92 in manufacturing operations, 65 in research and development, 40 in sales and marketing and 18 in a general and administrative capacity. The Company also employs a number of temporary employees and consultants on a contract basis. None of the Company's employees is represented by a labor union with respect to his or her employment by the Company. The Company has not experienced any work stoppages and considers its relations with its employees to be good. The Company's future success will depend, in part, upon its ability to attract and retain qualified personnel. Competition for qualified personnel in the communications industry is intense, and there can be no assurance that the Company will be successful in retaining its key employees or that it will be able to attract skilled personnel as the Company grows.

#### EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth certain information regarding the executive officers of the Company and their ages as of March 1, 1997:

NAME	AGE	POSITION
Anthony J. Ley.....	58	Chairman of the Board of Directors, President and Chief Executive Officer
Moshe Nazarathy.....	45	Senior Vice President, General Manager of Israel R&D Center, and Director
Robin N. Dickson.....	49	Chief Financial Officer
Michael Yost.....	53	Vice President, Operations
John E. Dahlquist.....	50	Vice President, Marketing

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 28 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 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 twelve patents.

Robin N. Dickson joined the Company 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. Prior to joining Raychem Corporation, Mr. Dickson worked with the accounting firm of Deloitte, Haskins & Sells in Brussels, Belgium. 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 the Company 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.

John E. Dahlquist joined the Company in November 1993 as Vice President Marketing. From September 1990 to October 1993, Mr. Dahlquist served as Vice President, Marketing at Philips Broadband Networks, Inc. From 1967 to August 1990, Mr. Dahlquist was employed at the Jerrold Division of General Instrument Corporation, where he held various engineering and marketing management positions, including Director International Business Programs from 1989 to 1990 and Director of European Cable Operations, U.K. from 1984 to 1989. Mr. Dahlquist holds a B.S.E.E. and an M.B.A. from Drexel University.

## ITEM 2. PROPERTIES

The Company's principal operations are located at its corporate headquarters in Sunnyvale, California. The lease on its headquarters building, of approximately 110,000 square feet, expires in July 2006. The Company has subleased approximately 25,000 square feet of its headquarters through July 1998. The Company also has a regional sales and support office in Pennsylvania,

several sales offices in the United States and a research and development facility in Israel. The Company believes that its existing facilities will be adequate to meet its needs in the foreseeable future.

#### ITEM 3. LEGAL PROCEEDINGS

There are no material pending legal proceedings to which the Company is a party or to which any of its 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

The information required by this Item is set forth on page 17 of the 1996 Annual Report to Stockholders under the caption "Selected Financial Data" and is incorporated herein by reference. At December 31, 1996, there were 207 holders of record of the Company's Common Stock.

#### ITEM 6. SELECTED FINANCIAL DATA

A summary of selected financial data for the Company for each of the last five fiscal years appears on page 17 of the 1996 Annual Report to Stockholders under the caption "Selected Financial Data" and is incorporated herein by reference.

#### 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" appears on pages 18-23 of the 1996 Annual Report to Stockholders and is incorporated herein by reference.

#### ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by this Item is incorporated herein by reference to pages 24 to 36 of the 1996 Annual Report to Stockholders filed as Exhibit 13.1 to this Annual Report on Form 10-K. Selected quarterly financial data for the Company appear on page 17 of the 1996 Annual Report to Stockholders under the caption "Selected Financial Data" and are incorporated herein by reference.

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

Not applicable.

### PART III

Certain information required by Part III is omitted from this Report on Form 10-K in that the Registrant will file its definitive Proxy Statement for its Annual Meeting of Stockholders to be held on April 30, 1997, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the "Proxy Statement"), not later than 120 days after the end of the fiscal year covered by this Report, and certain information included in the Proxy Statement is incorporated herein by reference.

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

(a) Executive Officers -- See the section entitled "Executive Officers" in Part I, Item 1 hereof.

(b) Directors -- The information required by this Item is incorporated by reference to the section entitled "Election of Directors" in the 1997 Proxy Statement.

#### ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is included in the 1997 Proxy

Statement under the caption "Executive Compensation" and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Information related to security ownership of certain beneficial owners and security ownership of management is set forth in the 1997 Proxy Statement under the caption "Security Ownership of Certain Beneficial Owners and Management" and is incorporated herein by reference.

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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

The following consolidated financial statements of the Company and subsidiary and Report of Independent Accountants are included in the 1996 Annual Report to Stockholders filed herewith as Exhibit 13.1 and are incorporated herein by reference:

	1996 ANNUAL REPORT PAGE -----
Consolidated Balance Sheet as at December 31, 1996 and 1995.....	24
Consolidated Statement of Operations for the years ended December 31, 1996, 1995 and 1994.....	25
Consolidated Statement of Stockholders' Equity (Deficit) for the years ended December 31, 1996, 1995 and 1994.....	26
Consolidated Statement of Cash Flows for the years ended December 31, 1996, 1995 and 1994.....	27
Notes to Consolidated Financial Statements.....	28 - 35
Report of Independent Accountants.....	36

(a) (2) Financial Statement Schedules

Schedules have been omitted because they are inapplicable, because the required information has been included in the financial statements or notes thereto, or the amounts are immaterial.

(a) (3) Exhibits

The documents listed on the Exhibit Index appearing at page 14 of this Report are filed herewith. The 1996 Annual Report to Stockholders and 1997 Proxy Statement shall be deemed to have been "filed" with the Securities and Exchange Commission only to the extent portions thereof are expressly incorporated herein by reference. Copies of the exhibits listed in the Exhibit Index will be furnished, upon request, to holders or beneficial owners of the Company's Common Stock.

(b) Reports on Form 8-K

None.

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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 Lightwaves, Inc., a Delaware corporation, has duly caused this Report on Form 10-K to be signed on its behalf

by the undersigned, thereunto duly authorized, in the City of Sunnyvale, State of California, on March 26, 1997.

HARMONIC LIGHTWAVES, INC.

By: /s/ ANTHONY J. LEY

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

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENT, that each person whose signature appears below constitutes and appoints Anthony J. Ley and Robin N. Dickson, jointly and severally, his attorneys-in-fact, each with the power of substitution, for him in any and all capacities, to sign any amendments to this Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorney-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

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 26, 1997
----- /s/ ROBIN N. DICKSON ----- (Robin N. Dickson)	Chief Financial Officer (Principal Financial and Accounting Officer)	March 26, 1997
----- /s/ BARRY LEMIEUX ----- (Barry Lemieux)	Director	March 26, 1997
----- /s/ E. FLOYD KVAMME ----- (E. Floyd Kvamme)	Director	March 26, 1997
----- /s/ DAVID A. LANE ----- (David A. Lane)	Director	March 26, 1997
----- /s/ MOSHE NAZARATHY ----- (Moshe Nazarathy)	Director	March 26, 1997
----- /s/ MICHEL L. VAILLAUD ----- (Michel L. Vaillaud)	Director	March 26, 1997
----- /s/ JOSEF BERGER ----- (Josef Berger)	Director	March 26, 1997

EXHIBIT INDEX

The following Exhibits to this report are filed herewith, or if marked with an asterisk (\*) or double asterisk (\*\*), are incorporated herein by reference.

EXHIBIT  
NUMBER

DESCRIPTION

EXHIBIT NUMBER	DESCRIPTION
3.1*	Certificate of Incorporation of Registrant
3.2*	Form of Restated Certificate of Incorporation of Registrant
3.3*	Bylaws of Registrant
4.1*	Form of Common Stock Certificate
10.1*+	Form of Indemnification Agreement
10.2*+	1988 Stock Option Plan and form of Stock Option Agreement
10.3*+	1995 Stock Plan and form of Stock Option Agreement
10.4*+	1995 Employee Stock Purchase Plan and form of Subscription Agreement
10.5*+	1995 Director Option Plan and form of Director Option Agreement
10.6*	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*	Distributor Agreement dated June 15, 1994 by and between Registrant and Scientific- Atlanta, Inc.
10.8*	Warrant to purchase Common Stock of Registrant issued to Scientific-Atlanta, Inc. on June 15, 1994
10.10*	Warrant to purchase Series D Preferred Stock of Registrant issued to Comdisco, Inc. on February 10, 1993
10.14**	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**	Facility lease dated as of January 12, 1996 by and between Eastrich No. 137 Corporation and Company
10.16	Loan Modification Agreement dated September 13, 1996 between Registrant and Silicon Valley Bank
10.17+	Change of Control Severance Agreement dated March 27, 1997 between Registrant and Anthony J. Ley
10.18+	Form of Change of Control Severance Agreement between Registrant and certain executive officers of Registrant
11.1	Computation of Net Income (Loss) Per Share
13.1	1996 Annual Report (to be deemed filed with the Securities and Exchange Commission only to the extent required by the instruction to exhibits for reports on Form 10-K)
21.1	Subsidiaries of Registrant
23.1	Consent of Independent Accountants
24.1	Power of Attorney

\* Previously filed as an Exhibit to the Company's Registration Statement on Form S-1 [No. 33-90752].

\*\* Previously filed as an Exhibit to the Company's 10-K for the year ended December 31, 1995.

+ Management Contract or Compensatory Plan or Arrangement required to be filed as an exhibit to this report on Form 10-K pursuant to Item 14(c) of this report.

## HARMONIC LIGHTWAVES, INC.

## LOAN MODIFICATION AGREEMENT

This Loan Modification Agreement is entered into as of September 13, 1996, by and between Harmonic Lightwaves, Inc. (the "Borrower") whose address is 549 Baltic Way, Sunnyvale, CA 94089, and Silicon Valley Bank (the "Lender") whose address is 3003 Tasman Drive, Santa Clara, CA 95054.

1. DESCRIPTION OF EXISTING INDEBTEDNESS Among other indebtedness which may be owing by Borrower to Lender, Borrower is indebted to Lender pursuant to, among other documents, a Promissory Note, dated August 26, 1993, in the original principal amount of One Million and 00/100 Dollars (\$1,000,000.00) (the "Note"). The Note has been modified pursuant to Loan Modification Agreements dated May 15, 1994, August 15, 1994, October 5, 1994 and September 14, 1995, pursuant to which, among other things, the principal amount of the Note was increased to Five Million and 00/100 Dollars (\$5,000,000.00). The Note, together with other promissory notes from Borrower to Lender, is governed by the terms of a Business Loan Agreement, dated August 26, 1993, between Borrower and Lender, as such agreement may be amended from time to time (the "Loan Agreement"). 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 Lender shall be referred to as the "Indebtedness."

2. DESCRIPTION OF COLLATERAL In connection with the repayment of the Indebtedness, Borrower has agreed not to further encumber or Pledge any of its assets pursuant to a Negative Pledge Agreement, being executed concurrently herewith.

Hereinafter, the above-described security documents, together with all other documents securing payment of the Indebtedness shall be referred to as the "Security Documents." Hereinafter, the Security Documents, together with all other documents evidencing or securing the Indebtedness shall be referred to as the "Existing Loan Documents."

3. DESCRIPTION OF CHANGE IN TERMS.

A. Modification(s) to Note

1. Payable in one payment of all outstanding principal plus all accrued unpaid interest on September 12, 1997 (the "Maturity Date"). In addition, Borrower will pay regular monthly payments of all accrued unpaid interest due as of each payment date beginning October 12, 1996, and all subsequent interest payments are due on the same day of each month thereafter.
2. The principal amount of the Note is hereby increased to Ten Million and 00/100 Dollars (\$10,000,000.00).
3. The interest rate to be applied to the unpaid principal balance of the Note shall be at a rate equal to Lender's Index (as described in the Note) or a LIBOR Interest Rate equal to 2.000 percentage points in excess of the LIBOR Base Rate as described in the LIBOR Supplement to Loan Modification Agreement, attached hereto.
4. The requirement for Borrower to maintain a zero balance under the Note is hereby deleted in its entirety.

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B. Modification(s) to Loan Agreement.

1. The following paragraphs are hereby incorporated into the Loan Agreement:  

Accounts Receivable and Accounts Payable. At such time



as outstandings under the line of credit facility exceed Five Million and 00/100 Dollars (\$5,000,000.00), Borrower shall provide to Lender, not later than twenty (20) days after the end of each month with a Borrowing Base Certificate and aged lists of accounts receivable and accounts payable. Semi-annual accounts receivable audits to be performed by Lender's agent. Borrower's deposit account will be debited for the audit expense and a notification will be mailed to Borrower.

Borrowing Base Formula. At such time as outstandings under the line of credit facility exceed Five Million and 00/100 Dollars (\$5,000,000.00), funds shall be advanced under the line of credit facility according to a borrowing base formula, as determined by Lender on a monthly basis, defined as follows: the lesser of (a) \$10,000,000.00 minus the face amount of outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit) minus the Foreign Exchange Reserve (as defined herein) or (b) the sum of (i) eighty percent (80%) of eligible domestic accounts receivable plus (ii) eighty percent (80%) of pre-approved foreign accounts receivable plus (iii) one hundred percent (100%) of accounts receivable backed by letters of credit, provided such letters of credit are issued by a bank acceptable to Lender and in form and substance acceptable to Lender, minus (iv) the face amount of outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit) minus (v) the Foreign Exchange Reserve. Eligible domestic accounts receivable shall include, but not be limited to, those accounts outstanding less than 90 days from the date of invoice, excluding foreign, government, contra, and intercompany accounts; and exclude accounts wherein 50% or more of the account is outstanding more than 90 days from the date of invoice. Foreign accounts may be eligible if approved by Lender on a case-by-case basis. Any account which alone exceeds 25% of total accounts will be ineligible to the extent said account exceeds 25% of total accounts. Also exclude any credit balances which are aged past 90 days. Also ineligible are any accounts which Lender in its sole judgment excludes for valid credit reasons.

Foreign Exchange Sublimit. Subject to the terms of this Agreement, as amended from time to time, Borrower may utilize up to \$2,000,000.00 for spot and future foreign exchange contracts (the "Exchange Contracts"). Borrower shall not request an Exchange Contract at any time it is not in compliance with any of the terms of this Agreement. All Exchange Contracts must provide for delivery of settlement on or before the Maturity Date. The limit available at any time shall be reduced by the following amounts (the "Foreign Exchange Reserve") on each day (the "Determination Date"): (i) on all outstanding Exchange Contracts on which delivery is to be effected or settlement allowed more than two business days from the Determination Date, 10% of the gross amount of the Exchange Contracts; plus (ii) on all outstanding Exchange Contracts on which delivery is to be effected or settlement allowed within two business days after the Determination Date, 100% of the gross amount of the Exchange Contracts. In lieu of the Foreign Exchange Reserve for 100% of the gross amount of any Exchange Contract, the Borrower may request that Lender debit Borrower's bank account with Lender for such amount, provided Borrower has immediately available funds in such amounts in its bank account.

Lender may, in its discretion, terminate the Exchange Contracts at any time (a) that an Event of Default occurs or (b) that there is not sufficient availability under the Note and Borrower does not have available funds in its bank account to satisfy the Foreign Exchange Reserve. If Lender terminates the Exchange Contracts, and without limitation of the FX Indemnity Provisions (as referred to below), Borrower agrees to reimburse Lender for any and all fees, costs and expenses relating thereto or arising in connection therewith.

Borrower shall not permit the total gross amount of all Exchange Contracts on which delivery is to be effected and settlement allowed in any two business day period to be more than \$2,000,000.00 nor shall Borrower permit the total gross amount of all Exchange Contracts to which Borrower is a party, outstanding at any one time, to exceed \$2,000,000.00.

Borrower shall execute all standard form applications and agreements of Lender in connection with the Exchange Contracts, and without limiting any of the terms of such applications and agreements, Borrower will pay all standard fees and charges of Lender in connection with the Exchange Contracts.

Without limiting any of the other terms of this Agreement or any such standard form applications and agreement of Lender, Borrower agrees to indemnify Lender and hold it harmless, from and against any and all claims, debts, liabilities, demands, obligations, actions, costs and expenses (including, without limitation, attorneys' fees of counsel of Lender's choice), of every nature and description which it may sustain or incur, based upon, arising out of, or in any way relating to any of the Exchange Contracts or any transactions relating thereto or contemplated thereby (collectively referred to as the "FX Indemnity Provisions").

2. The paragraph entitled "Letter of Credit Sublimit" is hereby amended, in its entirety, to read as follows:

Letters of Credit. Subject to the terms and conditions of this Agreement, Lender agrees to issue or cause to be issued letters of credit for the account of Borrower in an aggregate face amount not to exceed (i) the lesser of the \$10,000,000.00 or the Borrowing Base Formula minus (ii) the then outstanding principal balance of the Note provided that the face amount of outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit) shall not in any case exceed Ten Million Dollars (\$10,000,000.00). Each such letter of credit shall have an expiry date no later than one hundred eighty (180) days after the Maturity Date of the Note. provided that Borrower's letter of credit reimbursement obligation shall be secured by cash on terms acceptable to Lender at any time after the Maturity Date if the term of the Agreement is not extended by Lender. All such letters of credit shall be, in form and substance, acceptable to Lender in its sole discretion and shall be subject to the terms and conditions of Lender's form of application and letter of credit agreement.

Borrower shall indemnify, defend, protect and hold Lender 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.

Letter of credit Reimbursement: Reserve. Borrower may request that Lender 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, Lender shall treat such demand as an advance 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.

Upon the issuance of any letter of credit payable in a currency other than United States Dollars, Lender shall create a reserve (the "Letter of Credit Reserve") under the Committed Line 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 Lender from time to time to account for fluctuations in the exchange rate. The availability of funds under the Note shall be reduced by the amount of such reserve for so long as such letter of credit remains outstanding.

3. The paragraph entitled "Financial Covenants" is hereby amended to read in its entirety as follows:

Borrower shall maintain on a quarterly basis, a minimum quick ratio of 2.00 to 1.0; a minimum tangible net worth of \$35,000,000.00, plus seventy five percent (75%) of quarterly profits after taxes (exclusive of losses), beginning as of October 1, 1996, plus one hundred percent (100%) of net new equity; and a maximum total debt minus subordinated debt to tangible net worth plus subordinated debt ratio of 1.00 to 1.00. Additionally, Borrower shall achieve profitability on a quarterly basis with allowance for one quarterly loss, provided such loss does not exceed \$500,000.00.

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

5. PAYMENT OF LOAN FEES. Borrower shall pay to Lender a fee in the amount of Fifteen Thousand and 00/100 Dollars (\$15,000.00) (the "Loan Fee") plus all out-of-pocket expenses.

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

7. CONTINUING VALIDITY. Borrower (and each guarantor and pledgor signing below) understands and agrees that in modifying the existing Indebtedness, Lender 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. Lender's agreement to modifications to the existing Indebtedness pursuant to this Loan Modification Agreement in no way shall obligate Lender 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 Lender and Borrower to retain as liable parties all makers and endorsers of Existing Loan Documents, unless the party is expressly released by Lender 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.

8. CONDITIONS. The effectiveness of this Loan Modification Agreement is conditioned upon payment of the Loan Fee.

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

BORROWER:

HARMONIC LIGHTWAVES, INC.

By: /s/Robin N. Dickson  
-----

Name: Robin N. Dickson  
-----

Title: Chief Financial Officer  
-----

LENDER:

SILICON VALLEY BANK

By: /s/Peter A. Kidder  
-----

Name: Peter A. Kidder  
-----

Title: Vice President  
-----

## HARMONIC LIGHTWAVES, INC.

## CHANGE OF CONTROL SEVERANCE AGREEMENT

This Change of Control Severance Agreement (the "Agreement") is made and entered into by and between Anthony J. Ley (the "Employee") and Harmonic Lightwaves, Inc. (the "Company"), effective as of the latest date set forth by the signatures of the parties hereto below.

## R E C I T A L S

A. It is expected that the Company from time to time will consider the possibility of an acquisition by another company or other change of control. The Board of Directors of the Company (the "Board") recognizes that such consideration can be a distraction to the Employee and can cause the Employee to consider alternative employment opportunities. The Board has determined that it is in the best interests of the Company and its shareholders to assure that the Company will have the continued dedication and objectivity of the Employee, notwithstanding the possibility, threat or occurrence of a Change of Control (as defined below) of the Company.

B. The Board believes that it is in the best interests of the Company and its shareholders to provide the Employee with an incentive to continue his employment and to motivate the Employee to maximize the value of the Company upon a Change of Control for the benefit of its shareholders.

C. The Board believes that it is imperative to provide the Employee with certain severance benefits upon Employee's termination of employment following a Change of Control which provides the Employee with enhanced financial security and provides incentive and encouragement to the Employee to remain with the Company notwithstanding the possibility of a Change of Control.

D. Certain capitalized terms used in the Agreement are defined in Section 6 below.

The parties hereto agree as follows:

1. Term of Agreement. This Agreement shall terminate upon the date that all obligations of the parties hereto with respect to this Agreement have been satisfied.

2. At-Will Employment. The Company and the Employee acknowledge that the Employee's employment is and shall continue to be at-will, as defined under applicable law. If the Employee's employment terminates for any reason, including (without limitation) any termination prior to a Change of Control, the Employee shall not be entitled to any payments, benefits, damages, awards or compensation other than as provided by this Agreement, or as may otherwise be available in accordance with the Company's established employee plans and practices or pursuant to other agreements with the Company.

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3. Severance Benefits.

(a) Termination Following A Change of Control. If the Employee's employment terminates at any time within eighteen (18) months following a Change of Control, then, subject to Section 5, the Employee shall be entitled to receive the following severance benefits:

(i) Involuntary Termination. If the Employee's employment is terminated as a result of Involuntary Termination other than for Cause, then the Employee shall receive the following severance benefits from the Company:

(1) Severance Payment. A cash payment in an

amount equal to three hundred percent (300%) of the Employee's Annual Compensation;

(2) Continued Employee Benefits. One hundred percent (100%) Company-paid health, dental and life insurance coverage at the same level of coverage as was provided to such employee immediately prior to the Change of Control (the "Company-Paid Coverage"). If such coverage included the Employee's dependents immediately prior to the Change of Control, such dependents shall also be covered at Company expense. Company-Paid Coverage shall continue until the earlier of (i) three years from the date of the Change of Control, or (ii) the date that the Employee and his dependents become covered under another employer's group health, dental or life insurance plans that provide Employee and his dependents with comparable benefits and levels of coverage. For purposes of Title X of the Consolidated Budget Reconciliation Act of 1985 ("COBRA"), the date of the "qualifying event" for Employee and his dependents shall be the date upon which the Company-Paid Coverage terminates.

(3) Option and Restricted Stock Accelerated Vesting. One Hundred percent (100%) of the unvested portion of any stock option or restricted stock held by the Employee shall automatically be accelerated in full so as to become completely vested; provided, however, that if such potential vesting acceleration would cause a contemplated Change of Control transaction that was intended to be accounted for as a "pooling-of-interests" transaction to become ineligible for such accounting treatment under generally accepted accounting principles, as determined by the Company's independent public accountants (the "Accountants") prior to the Change of Control, Employee's stock options and restricted stock shall not have their vesting so accelerated.

(4) Outplacement Assistance. If desired by Employee, Company will pay up to five thousand dollars (\$5,000.00) for outplacement assistance selected by Company and approved by Employee.

(b) Timing of Severance Payments. Any payments to which Employee is entitled under Sections 3(a)(i)(1) and 5 shall be paid by the Company to the Employee (or to the Employee's successors in interest, pursuant to Section 7(b)) in cash and in full, not later than thirty (30) calendar days following the Termination Date.

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(c) Voluntary Resignation; Termination For Cause. If the Employee's employment terminates by reason of the Employee's voluntary resignation (and is not an Involuntary Termination), or if the Employee is terminated for Cause, then the Employee shall not be entitled to receive severance or other benefits except for those (if any) as may then be established under the Company's then existing severance and benefits plans and practices or pursuant to other agreements with the Company.

(d) Disability; Death. If the Company terminates the Employee's employment as a result of the Employee's Disability, or such Employee's employment is terminated due to the death of the Employee, then the Employee shall not be entitled to receive severance or other benefits except for those (if any) as may then be established under the Company's then existing severance and benefits plans and practices or pursuant to other agreements with the Company.

(e) Termination Apart from Change of Control. In the event the Employee's employment is terminated for any reason, either prior to the occurrence of a Change of Control or after the twelve (12)-month period following a Change of Control, then the Employee shall be entitled to receive severance and any other benefits only as may then be established under the Company's existing severance and benefits plans and practices or pursuant to other agreements with the Company.

4. Attorney Fees, Costs and Expenses. The Company shall promptly reimburse Employee, on a monthly basis, for the reasonable attorney fees, costs and expenses incurred by the Employee in connection with any action brought by Employee to enforce his rights hereunder, regardless of the outcome of the action.

5. Excise Tax Payments. In the event that the severance and other benefits provided for in this Agreement or otherwise payable to the Employee constitute "parachute payments" within the meaning of Section 280G of the Internal Revenue Code of 1986, as amended (the "Code") and will be subject to the excise tax imposed by Section 4999 of the Code, then the Employee shall receive (a) a payment from the Company sufficient to pay such excise tax, and (b) an additional payment from the Company sufficient to pay the excise tax and federal and state income taxes arising from the payments made by the Company to Employee pursuant to this sentence. Unless the Company and the Employee otherwise agree in writing, the determination of Employee's excise tax liability and the amount required to be paid under this Section 5 shall be made in writing by the Accountants. In the event that the excise tax incurred by Employee is determined by the Internal Revenue Service to be greater or lesser than the amount so determined by the Accountants, the Company and Employee agree to promptly make such additional payment, including interest and any tax penalties, to the other party as the Accountants reasonably determine is appropriate to ensure that the net economic effect to Employee under this Section 5, on an after-tax basis, is as if the Code Section 4999 excise tax did not apply to Employee. For purposes of making the calculations required by this Section 5, the Accountants may make reasonable assumptions and approximations concerning applicable taxes and may rely on interpretations of the Code for which there is a "substantial authority" tax reporting position. The Company and the Employee shall furnish to the Accountants such information and documents as the Accountants may reasonably request in order to make a determination under this

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Section. The Company shall bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Section 5.

6. Definition of Terms. The following terms referred to in this Agreement shall have the following meanings:

(a) Annual Compensation. "Annual Compensation" means an amount equal to (i) Employee's Company salary for the twelve months preceding the Change of Control, and (ii) Employee's 100% "On Target" bonus for the year in which the Change of Control occurs.

(b) Cause. "Cause" shall mean (i) any act of personal dishonesty taken by the Employee in connection with his responsibilities as an employee and intended to result in substantial personal enrichment of the Employee, (ii) the conviction of a felony, (iii) a willful act by the Employee which constitutes gross misconduct and which is injurious to the Company, and (iv) following delivery to the Employee of a written demand for performance from the Company which describes the basis for the Company's belief that the Employee has not substantially performed his duties, continued violations by the Employee of the Employee's obligations to the Company which are demonstrably willful and deliberate on the Employee's part.

(c) Change of Control. "Change of Control" means the occurrence of any of the following events:

(i) Any "person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended) becomes the "beneficial owner" (as defined in Rule 13d-3 under said Act), directly or indirectly, of securities of the Company representing fifty percent (50%) or more of the total voting power represented by the Company's then outstanding voting securities;

(ii) A change in the composition of the Board occurring within a two-year period, as a result of which fewer than a majority of the directors are Incumbent Directors. "Incumbent Directors" shall mean directors who either (A) are directors of the Company as of the date hereof, or (B) are elected, or nominated for election, to the Board with the affirmative votes of at least a majority of the Incumbent Directors at the time of such election or nomination (but shall not include an individual whose election or nomination is in connection with an actual or threatened proxy contest relating to the election of directors to the Company);

(iii) The consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) at least fifty percent (50%) of the total voting power represented by the voting securities of the Company or such surviving entity outstanding immediately after such merger or consolidation;

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(iv) The consummation of the sale or disposition by the Company of all or substantially all the Company's assets.

(d) Disability. "Disability" shall mean that the Employee has been unable to perform his Company duties as the result of his incapacity due to physical or mental illness, and such inability, at least 26 weeks after its commencement, is determined to be total and permanent by a physician selected by the Company or its insurers and acceptable to the Employee or the Employee's legal representative (such Agreement as to acceptability not to be unreasonably withheld). Termination resulting from Disability may only be effected after at least 30 days' written notice by the Company of its intention to terminate the Employee's employment. In the event that the Employee resumes the performance of substantially all of his duties hereunder before the termination of his employment becomes effective, the notice of intent to terminate shall automatically be deemed to have been revoked.

(e) Involuntary Termination. "Involuntary Termination" shall mean (i) without the Employee's express written consent, the significant reduction of the Employee's duties, authority or responsibilities, relative to the Employee's duties, authority or responsibilities as in effect immediately prior to such reduction, or the assignment to Employee of such reduced duties, authority or responsibilities; (ii) without the Employee's express written consent, a substantial reduction, without good business reasons, of the facilities and perquisites (including office space and location) available to the Employee immediately prior to such reduction; (iii) a reduction by the Company in the base salary of the Employee as in effect immediately prior to such reduction; (iv) a material reduction by the Company in the kind or level of employee benefits, including bonuses, to which the Employee was entitled immediately prior to such reduction with the result that the Employee's overall benefits package is significantly reduced; (v) the relocation of the Employee to a facility or a location more than twenty-five (25) miles from the Employee's then present location, without the Employee's express written consent; (vi) any purported termination of the Employee by the Company which is not effected for Disability or for Cause, or any purported termination for which the grounds relied upon are not valid; (vii) the failure of the Company to obtain the assumption of this agreement by any successors contemplated in Section 7(a) below; or (viii) any act or set of facts or circumstances which would, under California case law or statute constitute a constructive termination of the Employee.

(f) Termination Date. "Termination Date" shall mean (i) if this Agreement is terminated by the Company for Disability, thirty (30) days after notice of termination is given to the Employee (provided that the Employee shall not have returned to the performance of the Employee's duties on a full-time basis during such thirty (30)-day period), (ii) if the Employee's employment is terminated by the Company for any other reason, the date on which a notice of termination is given, provided that if within thirty (30) days after the Company gives the Employee notice of termination, the Employee notifies the Company that a dispute exists concerning the termination or the benefits due pursuant to this Agreement, then the Termination Date shall be the date on which such dispute is finally determined, either by mutual written agreement of the parties, or a by final judgment, order or decree of a court of competent jurisdiction (the time for appeal therefrom having expired and no appeal having been perfected), or (iii) if the Agreement is terminated by the Employee, the date on which the Employee delivers the notice of termination to the Company.



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7. Successors.

(a) Company's Successors. Any successor to the Company (whether direct or indirect and whether by purchase, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets shall assume the obligations under this Agreement and agree expressly to perform the obligations under this Agreement in the same manner and to the same extent as the Company would be required to perform such obligations in the absence of a succession. For all purposes under this Agreement, the term "Company" shall include any successor to the Company's business and/or assets which executes and delivers the assumption agreement described in this Section 7(a) or which becomes bound by the terms of this Agreement by operation of law.

(b) Employee's Successors. The terms of this Agreement and all rights of the Employee hereunder shall inure to the benefit of, and be enforceable by, the Employee's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

8. Notice.

(a) General. Notices and all other communications contemplated by this Agreement shall be in writing and shall be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid. In the case of the Employee, mailed notices shall be addressed to him at the home address which he most recently communicated to the Company in writing. In the case of the Company, mailed notices shall be addressed to its corporate headquarters, and all notices shall be directed to the attention of its Secretary.

(b) Notice of Termination. Any termination by the Company for Cause or by the Employee as a result of a voluntary resignation or an Involuntary Termination shall be communicated by a notice of termination to the other party hereto given in accordance with Section 8(a) of this Agreement. Such notice shall indicate the specific termination provision in this Agreement relied upon, shall set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination under the provision so indicated, and shall specify the termination date (which shall be not more than 30 days after the giving of such notice). The failure by the Employee to include in the notice any fact or circumstance which contributes to a showing of Involuntary Termination shall not waive any right of the Employee hereunder or preclude the Employee from asserting such fact or circumstance in enforcing his rights hereunder.

9. Miscellaneous Provisions.

(a) No Duty to Mitigate. The Employee shall not be required to mitigate the amount of any payment contemplated by this Agreement, nor shall any such payment be reduced by any earnings that the Employee may receive from any other source.

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(b) Waiver. No provision of this Agreement shall be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by the Employee and by an authorized officer of the Company (other than the Employee). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party shall be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(c) Whole Agreement. No agreements, representations or understandings (whether oral or written and whether express or implied) which

are not expressly set forth in this Agreement have been made or entered into by either party with respect to the subject matter hereof. This Agreement represents the entire understanding of the parties hereto with respect to the subject matter hereof and supersedes all prior arrangements and understandings regarding same.

(d) Choice of Law. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of California.

(e) Severability. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision hereof, which shall remain in full force and effect.

(f) Withholding. All payments made pursuant to this Agreement will be subject to withholding of applicable income and employment taxes.

(g) Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together will constitute one and the same instrument.

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IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by its duly authorized officer, as of the day and year set forth below.

COMPANY

HARMONIC LIGHTWAVES, INC.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

EMPLOYEE

\_\_\_\_\_  
Anthony J. Ley

Date: \_\_\_\_\_

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## HARMONIC LIGHTWAVES, INC.

## CHANGE OF CONTROL SEVERANCE AGREEMENT

This Change of Control Severance Agreement (the "Agreement") is made and entered into by and between \_\_\_\_\_ (the "Employee") and Harmonic Lightwaves, Inc. (the "Company"), effective as of the latest date set forth by the signatures of the parties hereto below.

## R E C I T A L S

A. It is expected that the Company from time to time will consider the possibility of an acquisition by another company or other change of control. The Board of Directors of the Company (the "Board") recognizes that such consideration can be a distraction to the Employee and can cause the Employee to consider alternative employment opportunities. The Board has determined that it is in the best interests of the Company and its shareholders to assure that the Company will have the continued dedication and objectivity of the Employee, notwithstanding the possibility, threat or occurrence of a Change of Control (as defined below) of the Company.

B. The Board believes that it is in the best interests of the Company and its shareholders to provide the Employee with an incentive to continue his employment and to motivate the Employee to maximize the value of the Company upon a Change of Control for the benefit of its shareholders.

C. The Board believes that it is imperative to provide the Employee with certain severance benefits upon Employee's termination of employment following a Change of Control which provides the Employee with enhanced financial security and provides incentive and encouragement to the Employee to remain with the Company notwithstanding the possibility of a Change of Control.

D. Certain capitalized terms used in the Agreement are defined in Section 6 below.

The parties hereto agree as follows:

1. Term of Agreement. This Agreement shall terminate upon the date that all obligations of the parties hereto with respect to this Agreement have been satisfied.

2. At-Will Employment. The Company and the Employee acknowledge that the Employee's employment is and shall continue to be at-will, as defined under applicable law. If the Employee's employment terminates for any reason, including (without limitation) any termination prior to a Change of Control, the Employee shall not be entitled to any payments, benefits, damages, awards or compensation other than as provided by this Agreement, or as may otherwise be available in accordance with the Company's established employee plans and practices or pursuant to other agreements with the Company.

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3. Severance Benefits.

(a) Termination Following A Change of Control. If the Employee's employment terminates at any time within eighteen (18) months following a Change of Control, then, subject to Section 5, the Employee shall be entitled to receive the following severance benefits:

(i) Involuntary Termination. If the Employee's employment is terminated as a result of Involuntary Termination other than for Cause, then the Employee shall receive the following severance benefits from the Company:

(1) Severance Payment. A cash payment in an

amount equal to two hundred percent (200%) of the Employee's Annual Compensation;

(2) Continued Employee Benefits. One hundred percent (100%) Company-paid health, dental and life insurance coverage at the same level of coverage as was provided to such employee immediately prior to the Change of Control (the "Company-Paid Coverage"). If such coverage included the Employee's dependents immediately prior to the Change of Control, such dependents shall also be covered at Company expense. Company-Paid Coverage shall continue until the earlier of (i) two years from the date of the Change of Control, or (ii) the date that the Employee and his dependents become covered under another employer's group health, dental or life insurance plans that provide Employee and his dependents with comparable benefits and levels of coverage. For purposes of Title X of the Consolidated Budget Reconciliation Act of 1985 ("COBRA"), the date of the "qualifying event" for Employee and his dependents shall be the date upon which the Company-Paid Coverage terminates.

(3) Option and Restricted Stock Accelerated Vesting. One Hundred percent (100%) of the unvested portion of any stock option or restricted stock held by the Employee shall automatically be accelerated in full so as to become completely vested; provided, however, that if such potential vesting acceleration would cause a contemplated Change of Control transaction that was intended to be accounted for as a "pooling-of-interests" transaction to become ineligible for such accounting treatment under generally accepted accounting principles, as determined by the Company's independent public accountants (the "Accountants") prior to the Change of Control, Employee's stock options and restricted stock shall not have their vesting so accelerated.

(4) Outplacement Assistance. If desired by Employee, Company will pay up to five thousand dollars (\$5,000.00) for outplacement assistance selected by Company and approved by Employee.

(b) Timing of Severance Payments. Any severance payment to which Employee is entitled under Section 3(a)(i)(1) shall be paid by the Company to the Employee (or to the Employee's successors in interest, pursuant to Section 7(b)) in cash and in full, not later than thirty (30) calendar days following the Termination Date.

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(c) Voluntary Resignation; Termination For Cause. If the Employee's employment terminates by reason of the Employee's voluntary resignation (and is not an Involuntary Termination), or if the Employee is terminated for Cause, then the Employee shall not be entitled to receive severance or other benefits except for those (if any) as may then be established under the Company's then existing severance and benefits plans and practices or pursuant to other agreements with the Company.

(d) Disability; Death. If the Company terminates the Employee's employment as a result of the Employee's Disability, or such Employee's employment is terminated due to the death of the Employee, then the Employee shall not be entitled to receive severance or other benefits except for those (if any) as may then be established under the Company's then existing severance and benefits plans and practices or pursuant to other agreements with the Company.

(e) Termination Apart from Change of Control. In the event the Employee's employment is terminated for any reason, either prior to the occurrence of a Change of Control or after the twelve (12)-month period following a Change of Control, then the Employee shall be entitled to receive severance and any other benefits only as may then be established under the Company's existing severance and benefits plans and practices or pursuant to other agreements with the Company.

4. Attorney Fees, Costs and Expenses. The Company shall promptly reimburse Employee, on a monthly basis, for the reasonable attorney fees, costs and expenses incurred by the Employee in connection with any action brought by Employee to enforce his rights hereunder, regardless of the outcome of the action.

5. Limitation on Payments. In the event that the severance and other benefits provided for in this Agreement or otherwise payable to the Employee (i) constitute "parachute payments" within the meaning of Section 280G of the Internal Revenue Code of 1986, as amended (the "Code") and (ii) but for this Section 5, would be subject to the excise tax imposed by Section 4999 of the Code, then the Employee's severance benefits under Section 3(a)(i) shall be either

- (a) delivered in full, or
- (b) delivered as to such lesser extent which would result in no portion of such severance benefits being subject to excise tax under Section 4999 of the Code,

whichever of the foregoing amounts, taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, results in the receipt by the Employee on an after-tax basis, of the greatest amount of severance benefits, notwithstanding that all or some portion of such severance benefits may be taxable under Section 4999 of the Code. Unless the Company and the Employee otherwise agree in writing, any determination required under this Section 5 shall be made in writing by the Company's Accountants immediately prior to Change of Control, whose determination shall be conclusive and binding upon the Employee and the Company for all purposes. For purposes of making the calculations required by this Section 5, the Accountants may make reasonable

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assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code. The Company and the Employee shall furnish to the Accountants such information and documents as the Accountants may reasonably request in order to make a determination under this Section. The Company shall bear all costs the Accountants may reasonably incur in connection with any calculations contemplated by this Section 5.

6. Definition of Terms. The following terms referred to in this Agreement shall have the following meanings:

(a) Annual Compensation. "Annual Compensation" means an amount equal to (i) Employee's Company salary for the twelve months preceding the Change of Control, and (ii) Employee's 100% "On Target" bonus for the year in which the Change of Control occurs.

(b) Cause. "Cause" shall mean (i) any act of personal dishonesty taken by the Employee in connection with his responsibilities as an employee and intended to result in substantial personal enrichment of the Employee, (ii) the conviction of a felony, (iii) a willful act by the Employee which constitutes gross misconduct and which is injurious to the Company, and (iv) following delivery to the Employee of a written demand for performance from the Company which describes the basis for the Company's belief that the Employee has not substantially performed his duties, continued violations by the Employee of the Employee's obligations to the Company which are demonstrably willful and deliberate on the Employee's part.

(c) Change of Control. "Change of Control" means the occurrence of any of the following events:

(i) Any "person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended) becomes the "beneficial owner" (as defined in Rule 13d-3 under said Act), directly or indirectly, of securities of the Company representing fifty percent (50%) or more of the total voting power represented by the Company's then outstanding voting securities;

(ii) A change in the composition of the Board occurring within a two-year period, as a result of which fewer than a majority of the directors are Incumbent Directors. "Incumbent Directors" shall mean directors who either (A) are directors of the Company as of the date hereof, or (B) are elected, or nominated for election, to the Board with the affirmative

votes of at least a majority of the Incumbent Directors at the time of such election or nomination (but shall not include an individual whose election or nomination is in connection with an actual or threatened proxy contest relating to the election of directors to the Company);

(iii) The consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) at least fifty

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percent (50%) of the total voting power represented by the voting securities of the Company or such surviving entity outstanding immediately after such merger or consolidation;

(iv) The consummation of the sale or disposition by the Company of all or substantially all the Company's assets.

(d) Disability. "Disability" shall mean that the Employee has been unable to perform his Company duties as the result of his incapacity due to physical or mental illness, and such inability, at least 26 weeks after its commencement, is determined to be total and permanent by a physician selected by the Company or its insurers and acceptable to the Employee or the Employee's legal representative (such Agreement as to acceptability not to be unreasonably withheld). Termination resulting from Disability may only be effected after at least 30 days' written notice by the Company of its intention to terminate the Employee's employment. In the event that the Employee resumes the performance of substantially all of his duties hereunder before the termination of his employment becomes effective, the notice of intent to terminate shall automatically be deemed to have been revoked.

(e) Involuntary Termination. "Involuntary Termination" shall mean (i) without the Employee's express written consent, the significant reduction of the Employee's duties, authority or responsibilities, relative to the Employee's duties, authority or responsibilities as in effect immediately prior to such reduction, or the assignment to Employee of such reduced duties, authority or responsibilities; (ii) without the Employee's express written consent, a substantial reduction, without good business reasons, of the facilities and perquisites (including office space and location) available to the Employee immediately prior to such reduction; (iii) a reduction by the Company in the base salary of the Employee as in effect immediately prior to such reduction; (iv) a material reduction by the Company in the kind or level of employee benefits, including bonuses, to which the Employee was entitled immediately prior to such reduction with the result that the Employee's overall benefits package is significantly reduced; (v) the relocation of the Employee to a facility or a location more than twenty-five (25) miles from the Employee's then present location, without the Employee's express written consent; (vi) any purported termination of the Employee by the Company which is not effected for Disability or for Cause, or any purported termination for which the grounds relied upon are not valid; (vii) the failure of the Company to obtain the assumption of this agreement by any successors contemplated in Section 7(a) below; or (viii) any act or set of facts or circumstances which would, under California case law or statute constitute a constructive termination of the Employee.

(f) Termination Date. "Termination Date" shall mean (i) if this Agreement is terminated by the Company for Disability, thirty (30) days after notice of termination is given to the Employee (provided that the Employee shall not have returned to the performance of the Employee's duties on a full-time basis during such thirty (30)-day period), (ii) if the Employee's employment is terminated by the Company for any other reason, the date on which a notice of termination is given, provided that if within thirty (30) days after the Company gives the Employee notice of termination, the Employee notifies the Company that a dispute exists concerning the termination or the benefits due pursuant to this Agreement, then the Termination Date shall be the date on which such dispute is finally determined, either by mutual written agreement of the parties, or a by final judgment, order or

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decree of a court of competent jurisdiction (the time for appeal therefrom having expired and no appeal having been perfected), or (iii) if the Agreement is terminated by the Employee, the date on which the Employee delivers the notice of termination to the Company.

7. Successors.

(a) Company's Successors. Any successor to the Company (whether direct or indirect and whether by purchase, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets shall assume the obligations under this Agreement and agree expressly to perform the obligations under this Agreement in the same manner and to the same extent as the Company would be required to perform such obligations in the absence of a succession. For all purposes under this Agreement, the term "Company" shall include any successor to the Company's business and/or assets which executes and delivers the assumption agreement described in this Section 7(a) or which becomes bound by the terms of this Agreement by operation of law.

(b) Employee's Successors. The terms of this Agreement and all rights of the Employee hereunder shall inure to the benefit of, and be enforceable by, the Employee's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

8. Notice.

(a) General. Notices and all other communications contemplated by this Agreement shall be in writing and shall be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid. In the case of the Employee, mailed notices shall be addressed to him at the home address which he most recently communicated to the Company in writing. In the case of the Company, mailed notices shall be addressed to its corporate headquarters, and all notices shall be directed to the attention of its Secretary.

(b) Notice of Termination. Any termination by the Company for Cause or by the Employee as a result of a voluntary resignation or an Involuntary Termination shall be communicated by a notice of termination to the other party hereto given in accordance with Section 8(a) of this Agreement. Such notice shall indicate the specific termination provision in this Agreement relied upon, shall set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination under the provision so indicated, and shall specify the termination date (which shall be not more than 30 days after the giving of such notice). The failure by the Employee to include in the notice any fact or circumstance which contributes to a showing of Involuntary Termination shall not waive any right of the Employee hereunder or preclude the Employee from asserting such fact or circumstance in enforcing his rights hereunder.

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9. Miscellaneous Provisions.

(a) No Duty to Mitigate. The Employee shall not be required to mitigate the amount of any payment contemplated by this Agreement, nor shall any such payment be reduced by any earnings that the Employee may receive from any other source.

(b) Waiver. No provision of this Agreement shall be modified, waived or discharged unless the modification, waiver or discharge is agreed to in writing and signed by the Employee and by an authorized officer of

the Company (other than the Employee). No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party shall be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(c) Whole Agreement. No agreements, representations or understandings (whether oral or written and whether express or implied) which are not expressly set forth in this Agreement have been made or entered into by either party with respect to the subject matter hereof. This Agreement represents the entire understanding of the parties hereto with respect to the subject matter hereof and supersedes all prior arrangements and understandings regarding same.

(d) Choice of Law. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of California.

(e) Severability. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision hereof, which shall remain in full force and effect.

(f) Withholding. All payments made pursuant to this Agreement will be subject to withholding of applicable income and employment taxes.

(g) Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together will constitute one and the same instrument.

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IN WITNESS WHEREOF, each of the parties has executed this Agreement, in the case of the Company by its duly authorized officer, as of the day and year set forth below.

COMPANY

HARMONIC LIGHTWAVES, INC.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

EMPLOYEE

\_\_\_\_\_

Date: \_\_\_\_\_

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## HARMONIC LIGHTWAVES, INC.

COMPUTATION OF NET INCOME (LOSS) PER SHARE (1) (2)  
(IN THOUSANDS, EXCEPT PER SHARE DATA)

	YEAR ENDED		
	DECEMBER 31, 1996	DECEMBER 31, 1995	DECEMBER 31, 1994
Net income (loss).....	\$ 5,918 =====	\$ 4,121 =====	\$ (2,368) =====
Weighted average shares outstanding:			
Common stock.....	10,106	5,797	443
Mandatorily redeemable convertible preferred stock.....	--	3,129	7,095
Common stock issuable upon exercise of options and warrants.....	1,368 -----	1,456 -----	638 -----
Weighted average common shares and equivalents.....	11,474 =====	10,382 =====	8,176 =====
Net income (loss) per share(1) (2).....	\$ 0.52 =====	\$ 0.40 =====	\$ (0.29) =====

- -----  
(1) Computed in the manner described in Note 1 to Notes to Consolidated  
Financial Statements.

(2) Share and per share data adjusted to reflect a 1-for-3 reverse stock split  
effective upon the reincorporation of the Company into Delaware in May 1995.

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## SELECTED FINANCIAL DATA

Year Ended December 31,	1996	1995	1994	1993	1992
(in thousands, except per share data)					
STATEMENT OF OPERATIONS DATA:					
Net sales	\$60,894	\$39,180	\$ 18,224	\$ 6,714	\$ 3,504
Gross profit (loss)	33,163	17,851	6,467	1,458	(263)
Income (loss) from operations	5,204	3,761	(2,189)	(4,956)	(4,771)
Net income (loss)	5,918	4,121	(2,368)	(5,163)	(4,869)
Net income (loss) per share(1)	\$ 0.52	\$ 0.40	\$ (0.29)	--	--
BALANCE SHEET DATA:					
Cash and cash equivalents	\$16,410	\$22,126	\$ 1,743	\$ 4,699	4,568
Working capital	34,158	32,495	6,893	6,506	5,489
Total assets	54,633	41,817	14,578	11,093	9,055
Long term debt, including current portion	--	--	1,480	1,446	1,457
Mandatorily Redeemable					
Convertible Preferred Stock	--	--	29,215	26,454	19,955
Stockholders' equity (deficit) (2)	43,641	37,009	(20,717)	(18,600)	(13,438)

Fiscal Years by Quarter	1996				1995			
(unaudited, in thousands, except per share data)								
QUARTERLY DATA	4TH							
	3RD	2ND	1ST	4TH	3RD	2ND	1ST	
Net sales	\$19,497	\$16,670	\$13,485	\$11,242	\$10,677	\$10,659	\$9,623	\$8,221
Gross profit	8,936	7,824	6,011	4,960	4,902	4,928	4,352	3,669
Income from operations	2,250	1,610	908	436	953	1,150	1,037	621
Net income	2,405	1,741	1,126	646	1,200	1,358	1,034	529
Net income per share(1)	\$ 0.21	\$ 0.15	\$ 0.10	\$ 0.06	\$ 0.11	\$ 0.12	\$ 0.10	\$ 0.06
Common stock price-high	\$ 23.50	\$ 26.00	\$ 23.50	\$ 14.63	\$ 17.50	\$ 19.50	\$19.13	--
Common stock price-low	15.38	15.38	11.25	9.00	8.50	15.00	13.00	--

The Company's Common Stock (Nasdaq symbol "HLIT") began trading publicly on the Nasdaq National Market System on May 22, 1995. Prior to that date, there was no public market for the Common Stock.

(1) The net loss per share for the year ended December 31, 1994 is pro forma. Net loss per share data for periods prior to 1994 have not been presented as such presentation is not meaningful. See Note 1 of Notes to Consolidated Financial Statements for an explanation of the method used to determine the number of shares used to compute per share amounts.

(2) The Company has not paid and does not intend to pay dividends in the foreseeable future.

of Financial Condition and Results of Operations

OVERVIEW

Harmonic Lightwaves, Inc. ("Harmonic" or the "Company") is a worldwide supplier of highly integrated fiber optic transmission, digital headend and element management systems for the delivery of interactive services over broadband networks. The Company designs, manufactures and markets optical transmitters, nodes, receivers, digital video compression and modulation equipment and element management hardware and software. These products are used by major communications providers, such as cable television operators, in bi-directional networks.

From its inception in June 1988 through 1991, the Company was principally engaged in development of its first optical transmitter and optical receiver products and began shipment of its initial products in late 1991. Subsequently, the Company commenced development of additional fiber optic products and began volume shipments of PWRLink transmitters in June 1994 and MAXLink 1550 nm transmission systems in June 1996. In March 1997, the Company announced the introduction of its TRANsend(TM) video and audio product family for digital broadband headends.

This Annual Report contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Actual results could differ materially from those projected in the forward-looking statements as a result of a number of factors, including those set forth under "Factors That May Affect Future Results Of Operations" below and elsewhere in this annual report.

RESULTS OF OPERATIONS

The following table sets forth certain consolidated statement of operations data as a percentage of net sales for the periods indicated:

Year Ended December 31,	1996	1995	1994
Net sales	100%	100%	100%
Cost of sales	54	54	64
Gross profit	46	46	36
Operating expenses:			
Research and development	15	16	18
Sales and marketing	16	15	23
General and administrative	6	5	7
Total operating expenses	37	36	48
Income (loss) from operations	9	10	(12)
Other income (expense), net	1	1	(1)
Income (loss) before income taxes	10	11	(13)
Provision for income taxes	--	--	--
Net income (loss)	10%	11%	(13)%

NET SALES The Company's net sales increased by 55% to \$60.9 million in 1996. This growth in net sales was primarily attributable to higher unit sales of the Company's existing products, particularly the PWRLink transmitter and return path products. In addition, the Company began shipment of its 1550 nm MAXLink transmission system during the second quarter of 1996. These factors were partially offset by lower unit sales of the YAGLink optical transmitter and lower selling prices for certain products. Net sales increased by 115% to \$39.2 million in 1995 from \$18.2 million in 1994. This growth in net sales was due primarily to higher unit sales of the Company's

MANAGEMENT'S DISCUSSION AND ANALYSIS  
of Financial Condition and Results of Operations

principal products, particularly the PWRLink transmitter and return path products. Higher unit sales PWRLink transmitter in 1995 reflected a full year of shipments of the product, which began initial volume shipments in June 1994 and was sold only in nominal quantities prior to that time.

Historically, the majority of Harmonic's net sales has been to relatively few customers, and Harmonic expects this customer concentration to continue in the foreseeable future. In 1996, sales to Tratec (the Company's U.K. distributor), Capella (the Company's Canadian distributor) and ANTEC Corporation ("ANTEC") accounted for 15%, 15% and 13%, respectively, of the Company's net sales. In 1995, sales to Tratec, ANTEC and Capella accounted for 22%, 15% and 15%, respectively, of the Company's net sales. In 1994, sales to ANTEC, Capella, Siemens, Tratec and Scientific-Atlanta, Inc. accounted for 22%, 15%, 14%, 12% and 12% of the Company's net sales.

Harmonic has adopted a strategy of selling to major domestic customers through its own direct sales force and expects that domestic OEM and distributor revenues will be a smaller percentage of net sales in the future. In this regard, sales to ANTEC in the fourth quarter of 1996 constituted less than 10% of net sales, and are expected to be insignificant in the future. Sales to customers outside the United States represented 57%, 65% and 57% of net sales in 1996, 1995 and 1994, respectively. Harmonic expects international sales to continue to account for a substantial percentage of its net sales for the foreseeable future.

**GROSS PROFIT** Gross profit increased to \$27.7 million (46% of net sales) in 1996 from \$17.9 million (46% of net sales) in 1995. The increase in gross profit was principally due to higher unit sales volume which allowed the Company to improve fixed cost absorption and realize increasing economies of scale through higher production and purchasing volumes, partially offset by lower selling prices for certain products. In addition, a more favorable product mix which included a higher percentage of transmitters also contributed to the increase in gross profit in 1996. Gross profit increased to \$17.9 million (46% of net sales) in 1995 from \$6.5 million (36% of net sales) in 1994. The gross profit growth was due principally to higher unit sales volume and increased efficiencies of a new manufacturing facility which commenced production in the first quarter of 1995.

**RESEARCH AND DEVELOPMENT** Research and development expenses increased to \$9.2 million from \$6.1 million in 1995, but decreased as a percentage of net sales from 16% to 15%, reflecting higher sales levels. The increase in spending related primarily to increased headcount, particularly at the Company's Israeli subsidiary, and increased use of outside subcontractors and consultants in Israel and in connection with the element management and 1550 nm MAXLink transmission system development programs. Research and development expenses increased to \$6.1 million from \$3.2 million in 1994, but decreased as a percentage of net sales from 18% to 16%, reflecting higher sales levels. The increase in research and development expenses in 1995 reflected increased headcount and use of outside subcontractors and consultants, and higher prototype material costs in conjunction with the development of the Company's 1550 nm MAXLink transmission system. Research and development expenses for 1996 and 1995 are net of grants from the BIRD Foundation of approximately \$140,000 and \$300,000, respectively. The Company anticipates that research and development expenses will continue to increase significantly, although they may vary as a percentage of net sales.

**SALES AND MARKETING** Sales and marketing expenses increased to \$9.8 million (16% of net sales) in 1996 from \$5.8 million (15% of net sales) in 1995. The increase in sales and marketing expenses in 1996 was primarily attributable to higher headcount associated with expansion of the direct sales force and the customer service and technical support organizations, as well as higher promotional expenses and commissions to international sales representatives. Sales and marketing expenses increased to \$5.8 million in 1995 from \$4.1 million in 1994, but decreased as a percentage of net sales from 23% to 15%. The increase in sales and marketing expenses in

## of Financial Condition and Results of Operations

1995 was principally due to increased commissions to international sales representatives and higher payroll and promotional costs. The Company expects that sales and marketing expenses will continue to increase significantly, although they may vary as a percentage of net sales.

**GENERAL AND ADMINISTRATIVE** General and administrative expenses increased to \$3.5 million (6% of net sales) in 1996 from \$2.2 million (5% of net sales) in 1995. The increase in expenses was principally attributable to increased staffing and related costs of supporting the Company's growth, and to a lesser extent, to certain costs associated with being a public company. General and administrative expenses increased to \$2.2 million in 1995 from \$1.3 million in 1994, but decreased as a percentage of net sales from 7% to 5%, reflecting higher sales levels. The increase in general and administrative expenses in 1995 was due primarily to costs of supporting the Company's growth, and to a lesser extent to certain costs associated with being a public company. The Company expects to incur higher levels of general and administrative expenses in the future, although such expenses may vary as a percentage of net sales.

**OTHER INCOME (EXPENSE)** Interest and other income (expense) was \$1.0 million in 1996 compared to \$0.6 million in 1995. The increase in interest and other income in 1996 was principally due to interest earned on higher average cash balances in 1996 following closing of the Company's initial public offering (the "IPO") on May 30, 1995, and lower interest expense in 1996 as the Company repaid all capital leases and bank debt in 1995. Interest and other income (expense) was \$0.6 million in 1995 compared to (\$0.2) million in 1994. The income in 1995 was principally attributable to interest earned on cash balances, following the closing of the Company's IPO, partially offset by interest expense. The expense in 1994 was principally attributable to interest paid on capital lease obligations and on bank debt.

**INCOME TAXES** The provision for income taxes for 1996 and 1995 is based on an estimated annual tax rate of 5% resulting from federal and state alternative minimum taxes. This rate reflects estimated realization of deferred tax assets, primarily net operating loss carryforwards. In 1994, the Company had no income tax provision because of a net loss for the year. The Company had available federal net operating loss carryforwards of approximately \$5.8 million at December 31, 1996. Under current tax law, the Company's utilization of its net operating loss carryforwards has been limited and in the future may be limited or impaired in certain circumstances resulting from a change in ownership. The Company expects to have an effective annual tax rate of 10%-15% in 1997 and a effective tax rate beyond 1997 that approximates statutory rates after full utilization of the net operating loss carryforwards.

## LIQUIDITY AND CAPITAL RESOURCES

The Company completed the IPO in May 1995, raising approximately \$24.2 million, net of offering costs. Prior to that, the Company satisfied its liquidity needs primarily from the net proceeds of private sales of Preferred Stock, and to a lesser extent, from capital equipment leases and bank borrowings.

Cash provided by operations was approximately \$0.3 million in 1996 compared to \$2.3 million in 1995 and cash used in operations of approximately \$5.3 million in 1994. The decrease in cash provided by operations in 1996 compared to 1995 was primarily due to higher accounts receivable and inventory to support increases in sales and production volumes, and prepayment of rents and deposits of \$1.8 million in connection with the Company's new corporate headquarters, partially offset by higher net income, accounts payable and accrued liabilities. The increase in cash provided by operations in 1995 compared to 1994 was primarily due to the Company's profitability in 1995 compared to an operating loss in 1994, partially offset by increased investments in inventories and receivables to support higher sales and production volumes.

including \$16.4 million of cash and cash equivalents. During the third quarter of 1996, the Company renegotiated its bank line of credit, which now provides for up to \$10.0 million in borrowings and expires in September 1997. The line of credit bears interest at the bank's prime rate or LIBOR plus 2.0%. There were no outstanding borrowings under this line during 1996.

Additions to property, plant and equipment were approximately \$6.7 million during 1996 compared to \$3.9 million and \$1.4 million in 1995 and 1994 respectively. The increase in 1996 was due principally to increased expenditures for manufacturing and test equipment resulting from higher demand for the Company's products, introduction of new products including the 1550 nm MAXLink transmission system, and leasehold improvements and furniture and fixtures for the new facility. While the Company currently has no material commitments, it expects to spend approximately \$5.0 million on capital expenditures in 1997, primarily for manufacturing and test equipment.

The Company believes that its existing liquidity sources and anticipated funds from operations will satisfy its cash requirements for at least the next twelve months.

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

**POTENTIAL FLUCTUATIONS IN FUTURE OPERATING RESULTS** The Company's operating results have fluctuated and may continue to fluctuate in the future, on an annual and a quarterly basis, as a result of a number of factors, many of which are outside of the Company's control, including the level of capital spending in the cable television industry, changes in the regulatory environment, changes in market demand, the timing of customer orders, competitive market conditions, lengthy sales cycles, new product introductions by the Company or its competitors, market acceptance of new or existing products, the cost and availability of components, the mix of the Company's customer base and sales channels, the mix of products sold, development of custom products, the level of international sales and general economic conditions. The Company 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 the Company'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 the Company's operating results. If sales are below expectations in any given quarter, the adverse impact of the shortfall on the Company's operating results may be magnified by the Company's inability to adjust spending to compensate for the shortfall.

**DEPENDENCE ON KEY CUSTOMERS AND END USERS** Historically, a substantial majority of the Company's sales have been to relatively few customers. Sales to the Company's ten largest customers in 1996, 1995 and 1994 accounted for approximately 72%, 80% and 88%, respectively, of its net sales. Due in part to the consolidation of ownership of domestic cable television systems, the Company expects that sales to relatively few customers will continue to account for a significant percentage of net sales for the foreseeable future. Harmonic has adopted a strategy to sell to major domestic customers through its own direct sales force and expects that domestic OEM and distributor revenues will be a smaller percentage of net sales in the future. In this regard, net sales to ANTEC in the fourth quarter of 1996 were less than 10% of net sales, and are expected to be insignificant in the future. Substantially all of the Company's sales are made on a purchase order basis, and none of the Company's customers has entered into a long-term agreement requiring it to purchase the Company's products. The loss of, or any reduction in orders from, a significant customer would have a material adverse effect on the Company's business and operating results.

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#### MANAGEMENT'S DISCUSSION AND ANALYSIS of Financial Condition and Results of Operations

**DEPENDENCE ON CABLE TELEVISION INDUSTRY CAPITAL SPENDING** To date, substantially all of the Company's sales have been derived, directly or indirectly, from sales to cable television operators. Demand for the Company's products depends to a significant extent upon the magnitude and timing of capital spending by cable

television operators for constructing, rebuilding or upgrading their systems. The capital spending patterns of cable television operators are dependent on a variety of factors, including access to financing, cable television operators' annual budget cycles, the status of federal, local and foreign government regulation of telecommunications and television broadcasting, overall demand for cable television services, competitive pressures (including the availability of alternative video delivery technologies such as satellite broadcasting), discretionary customer spending patterns and general economic conditions. The Company believes that the consolidation of ownership of domestic cable television systems, by acquisition and system exchanges, together with uncertainty over regulatory issues, particularly the debate over the provisions of the Telecommunications Act of 1996, caused delays in capital spending by major domestic MSOs during the second half of 1995 and first quarter of 1996. Although the Act became law in February 1996 and the Company believes that its provisions will result in increased capital expenditures in the telecommunications industry, there can be no assurance that capital spending by domestic MSOs will increase in the near future, or at all, or that Harmonic's sales will benefit. 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.

**HIGHLY COMPETITIVE INDUSTRY** The market for cable television transmission equipment is extremely competitive and has been characterized by rapid technological change. Most of the Company's competitors are substantially larger and have greater financial, technical, marketing and other resources than the Company. Many of such large competitors are in a better position to withstand any significant reduction in capital spending by cable television operators. In addition, many of the Company's competitors have more long standing and established relationships with domestic and foreign cable television operators than does the Company. There can be no assurance that the Company will be able to compete successfully in the future or that competition will not have a material adverse effect on the Company's business and operating results.

**RAPID TECHNOLOGICAL CHANGE** The market for the Company's products is relatively new, making it difficult to accurately predict the market's future growth rate, size and technological direction. In view of the evolving nature of this market, there can be no assurance that cable television operators, telephone companies or other suppliers of broadband services will not decide to adopt alternative architectures or technologies that are incompatible with the Company's products, which would have a material adverse effect on the Company's business and operating results.

The broadband communications markets are characterized by continuing technological advancement. To compete successfully, the Company must design, develop, manufacture and sell new products that provide increasingly higher levels of performance and reliability. As new markets for broadband communications equipment continue to develop, the Company must successfully develop new products for these markets in order to remain competitive. For example, to compete successfully in the future, the Company believes that it must successfully develop and introduce products that will facilitate the processing and transmission of digital signals over optical networks. While the Company has announced and demonstrated initial products for digital applications, there can be no assurance that the Company will successfully complete development of, or successfully introduce, products for digital applications, or that such products will achieve commercial acceptance. In addition, in order to successfully develop and market its planned products for digital applications, the Company 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, there can be no assurance that such agreements will be negotiated on terms acceptable to the Company, or at all. The failure to enter into technology development or licensing agreements, when necessary, could limit the Company's ability to develop and market new products and could have a material adverse effect on the Company's business and operating results.

The failure of the Company to successfully develop and introduce new products that address the changing needs of the broadband communications market could have a material adverse effect on the Company's business and operating results. In addition, there can be no assurance that the successful introduction by the Company of new products will not have an adverse effect on the sales of the Company's existing products. For instance, an emerging trend in the domestic market toward narrowcasting (targeted delivery of advanced services to small groups of subscribers) is causing changes in the network architectures of some cable operators. This may have the effect of changing the Company's product mix toward lower price transmitters, which could adversely affect the Company's gross margins.

**SOLE OR LIMITED SOURCES OF SUPPLY** Certain components and subassemblies necessary for the manufacture of the Company's products are obtained from a sole supplier or a limited group of suppliers. The reliance on sole or limited suppliers and the Company's increasing reliance on subcontractors involve 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 or subassemblies. The Company does not maintain long-term agreements with any of its suppliers or subcontractors. An inability to obtain adequate deliveries or any other circumstance that would require the Company to seek alternative sources of supply could affect the Company's ability to ship its products on a timely basis, which could damage relationships with current and prospective customers and could have a material adverse effect on the Company's business and operating results. The Company believes that investment in inventories will constitute a significant portion of its working capital in the future. As a result of such investment in inventories, the Company may be subject to an increasing risk of inventory obsolescence in the future, which would materially and adversely affect its business and operating results.

**RISKS OF INTERNATIONAL OPERATIONS** Sales to customers outside of the United States in 1996, 1995 and 1994 represented 57%, 65% and 57% of net sales, respectively, and the Company expects that international sales will continue to represent a substantial portion of its net sales for the foreseeable future. In addition, the Company has an Israeli subsidiary that engages primarily in research and development. International operations are subject to a number of risks, including changes in foreign government regulations and telecommunications standards, export license requirements, tariffs and taxes, other trade barriers, fluctuations in currency exchange rates, difficulty in collecting accounts receivable, difficulty in staffing and managing foreign operations and political and economic instability. While international sales are typically denominated in U.S. dollars, fluctuations in currency exchange rates could cause the Company's products to become relatively more expensive to customers in a particular country, leading to a reduction in sales or profitability in that country. Payment cycles for international customers are typically longer than those for customers in the United States. There can be no assurance that foreign markets will continue to develop or that the Company will receive additional orders to supply its products for use in foreign broadband systems.

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Consolidated  
BALANCE SHEETS

December 31	1996	1995
-----		
(in thousands, except share data)		
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$16,410	\$22,126
Accounts receivable, net	12,643	5,802
Inventories	14,782	9,176
Prepaid expenses and other assets	1,315	199
	-----	-----
Total current assets	45,150	37,303
Property and equipment, net	8,751	4,514



Other assets	732	--
	-----	-----
	\$54,633	\$41,817
	=====	=====
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 5,604	\$ 2,201
Accrued liabilities	5,388	2,607
	-----	-----
Total current liabilities	10,992	4,808
	-----	-----
Commitments (Notes 8 and 10)		
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; 10,160,876 and 9,903,501 shares issued and outstanding	10	10
Capital in excess of par value	54,579	53,865
Accumulated deficit	(10,948)	(16,866)
	-----	-----
Total stockholders' equity	43,641	37,009
	-----	-----
	\$54,633	\$41,817
	=====	=====

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

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Consolidated Statement of  
OPERATIONS

Year Ended December 31	1996	1995	1994
-----			
(in thousands, except per share data)			
Net sales	\$ 60,894	\$ 39,180	\$ 18,224
Cost of sales	33,163	21,329	11,757
	-----	-----	-----
Gross profit	27,731	17,851	6,467
	-----	-----	-----
Operating expenses:			
Research and development	9,237	6,144	3,209
Sales and marketing	9,827	5,750	4,108
General and administrative	3,463	2,196	1,339
	-----	-----	-----
Total operating expenses	22,527	14,090	8,656
	-----	-----	-----
Income (loss) from operations	5,204	3,761	(2,189)
Interest expense	(21)	(202)	(237)
Interest and other income (expense), net	1,046	779	58
	-----	-----	-----
Income (loss) before income taxes	6,229	4,338	(2,368)
Provision for income taxes	311	217	--
	-----	-----	-----
Net income (loss)	\$ 5,918	\$ 4,121	\$ (2,368)
	=====	=====	=====
Net income (loss) per share	\$ 0.52	\$ 0.40	\$ (0.29)
	=====	=====	=====
Weighted average common shares and equivalents	11,474	10,382	8,176
	=====	=====	=====

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

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Consolidated Statement of  
STOCKHOLDERS' EQUITY (DEFICIT)

	Common Stock Shares	Common Stock Amount	Capital in Excess of Par Value	Accumulated Deficit	Stockholders' Equity (Deficit)
(in thousands)					
Balance at December 31, 1993	418	\$ 1	\$ 18	\$(18,619)	\$(18,600)
Exercise of stock options and warrants	51	--	51	--	51
Issuance of Common Stock warrant	--	--	200	--	200
Net loss	--	--	--	(2,368)	(2,368)
Balance at December 31, 1994	469	1	269	(20,987)	(20,717)
Conversion of Mandatorily Redeemable Preferred Stock	7,095	7	29,208	--	29,215
Issuance of Common Stock in initial public offering, net	2,000	2	24,198	--	24,200
Exercise of stock options and warrants	340	--	190	--	190
Net income	--	--	--	4,121	4,121
Balance at December 31, 1995	9,904	10	53,865	(16,866)	37,009
Exercise of stock options and warrants	208	--	240	--	240
Issuance of Common Stock under Stock Purchase Plan	49	--	474	--	474
Net Income	--	--	--	5,918	5,918
Balance at December 31, 1996	10,161	\$ 10	\$54,579	\$(10,948)	\$ 43,641

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

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Consolidated Statement of  
CASH FLOWS

Year Ended December 31,	1996	1995	1994
(in thousands)			
Cash flows from operating activities:			
Net income (loss)	\$ 5,918	\$ 4,121	\$(2,368)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	2,506	1,799	1,151
Issuance of Common Stock warrant	--	--	200
Changes in assets and liabilities:			
Accounts receivable	(6,841)	(1,246)	(3,242)
Inventories	(5,606)	(3,523)	(2,918)
Prepaid expenses and other assets	(1,848)	(15)	(43)
Accounts payable	3,403	2	1,300
Accrued liabilities	2,781	1,128	585
Net cash provided by (used in) operating activities	313	2,266	(5,335)
Cash flows used in investing activities for the acquisition of property and equipment	(6,743)	(3,119)	(679)
Cash flows from financing activities:			
Borrowings (repayment) under bank line of credit	--	(922)	922
Proceeds from issuance of Common Stock, net	714	24,390	51
Proceeds from issuance of Mandatorily Redeemable Convertible Preferred Stock, net	--	--	2,761
Repayments of long-term debt	--	(2,232)	(676)
Net cash provided by financing activities	714	21,236	3,058
Net increase (decrease) in cash and cash equivalents	(5,716)	20,383	(2,956)
Cash and cash equivalents at beginning of period	22,126	1,743	4,699
Cash and cash equivalents at end of period	\$ 16,410	\$ 22,126	\$ 1,743
Supplemental schedule of cash flow information and non-cash financing activities:			
Interest paid during the period	\$ 21	\$ 193	\$ 211

Income taxes paid during the period	\$ 285	\$ 126	\$ --
Issuance of Mandatorily Redeemable Convertible Preferred Stock upon conversion of convertible promissory notes and accrued interest	\$ --	\$ --	\$ 3,000
Acquisition of property and equipment under capital leases and equipment term loan	\$ --	\$ 752	\$ 710
	=====	=====	=====

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

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NOTES

to Consolidated Financial Statements

NOTE 1: ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Harmonic Lightwaves, Inc. (the "Company") is a worldwide supplier of highly integrated fiber optic transmission, digital headend and element management systems for the delivery of interactive services over broadband networks. The Company operates in one industry segment. See Note 9 for geographic information and information regarding sales to significant customers.

**REINCORPORATION AND REVERSE STOCK SPLIT** The Company originally incorporated in California in June 1988. In May 1995, the Company reincorporated in Delaware. In conjunction with the reincorporation, all outstanding shares of the predecessor California company were exchanged into common stock of the Delaware company in a one-for-three reverse stock split. All applicable share and per share amounts in the accompanying consolidated financial statements have been retroactively adjusted to reflect this reverse stock split.

**BASIS OF PRESENTATION** The consolidated financial statements of the Company include the financial statements of the Company and its wholly-owned subsidiary. All intercompany accounts and balances have been eliminated. The Company's fiscal quarters end on the Friday nearest the calendar quarter end.

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts. Actual results could differ from these estimates.

**CASH EQUIVALENTS** The Company considers all highly liquid investments purchased with an original maturity date of three months or less at the date of purchase to be cash equivalents. The Company's investments are classified as held-to-maturity.

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

**REVENUE RECOGNITION** Revenue is generally recognized upon shipment of product. A provision for the estimated cost of warranty is recorded at the time revenue is recognized.

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

**PROPERTY AND EQUIPMENT** Property and equipment are recorded at cost. Depreciation and amortization are computed using the straight-line method based upon the shorter of the estimated useful lives of the assets, which range from two to ten years, or the lease term of the respective assets, if applicable.

**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 operators and distributors as discussed in Note 9. The Company performs ongoing credit evaluations of its customers, and provides for expected losses but to date has not experienced any material losses. At December 31, 1996, receivables from three customers represented 20%, 17% and 11%, respectively, of accounts

receivable. At December 31, 1995, receivables from two customers represented 32% and 19%, respectively, of accounts receivable.

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NOTES

to Consolidated Financial Statements

**FOREIGN CURRENCY** The functional currency of the Company's subsidiary is the U.S. dollar. Foreign currency translation gains and losses, which have not been material to date, are included in the statement of operations.

**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 on Financial Accounting Standards No. 109 ("SFAS No. 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 ("SFAS No. 123").

**NET INCOME (LOSS) PER SHARE** Net income (loss) per share is computed using the weighted average number of common and common equivalent shares outstanding during the period. Common equivalent shares consist of Mandatorily Redeemable Convertible Preferred Stock (using the if converted method), and stock options and warrants (using the treasury stock method). Common equivalent shares are excluded from the computation if their effect is anti-dilutive except that, pursuant to the requirements of the Securities and Exchange Commission, common equivalent shares relating to stock options and warrants (using the treasury stock method and the initial public offering price) issued from April 1, 1994 through the Company's initial public offering ("IPO") have been included in the computation for all periods presented through the Company's IPO even if anti-dilutive. The net loss per share for the year ended December 31, 1994, is pro forma.

**RECLASSIFICATION** Certain amounts in prior years' financial statements and related notes have been reclassified to conform to the 1996 presentation. These reclassifications are not material.

NOTE 2: CASH AND CASH EQUIVALENTS

At December 31, 1996 and 1995, the Company had the following amounts in cash and cash equivalents, with original maturity dates of three months or less. Realized gains and losses for the years ended December 31, 1996 and 1995 and the difference between gross amortized cost and estimated fair value at December 31, 1996 and 1995 were immaterial.

December 31,	1996	1995
-----		
(in thousands)		
Commercial paper	\$15,964	\$14,769
Cash and money market accounts	446	7,357
	-----	-----
Total cash and cash equivalents	\$16,410	\$22,126
	=====	=====

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NOTE 3: BALANCE SHEET DETAILS

December 31,	1996	1995
-----		
(in thousands)		
Accounts receivable:		
Gross accounts receivable	\$ 12,943	\$ 5,902
Less: allowance for doubtful accounts	(300)	(100)
	-----	-----
	\$ 12,643	\$ 5,802
	=====	=====
Inventories:		
Raw materials	\$ 3,104	\$ 2,866
Work-in-process	4,704	2,372
Finished goods	6,974	3,938
	-----	-----
	\$ 14,782	\$ 9,176
	=====	=====
Property and equipment:		
Furniture and fixtures	\$ 1,124	\$ 201
Machinery and equipment	12,183	8,427
Leasehold improvements	1,982	655
	-----	-----
	15,289	9,283
Less: accumulated depreciation and amortization	(6,538)	(4,769)
	-----	-----
	\$ 8,751	\$ 4,514
	=====	=====
Accrued liabilities:		
Accrued compensation	\$ 2,166	\$ 1,090
Accrued warranties	733	569
Other	2,489	948
	-----	-----
	\$ 5,388	\$ 2,607
	=====	=====

NOTE 4: LINE OF CREDIT

The Company has a bank line-of-credit agreement, providing for borrowings of up to \$ 10,000,000. The agreement contains certain financial covenants and is available until September 1997. The borrowings bear interest at the bank's prime rate or LIBOR plus 2%. There were no outstanding borrowings under the line at December 31, 1996 or 1995.

NOTE 5: CAPITAL STOCK

INITIAL PUBLIC OFFERING In May 1995, the Company completed its initial public offering ("IPO") of 2,600,000 shares of common stock, 600,000 of which were sold by existing stockholders, at a price of \$13.50 per share. Net proceeds to the Company were approximately \$24.2 million, after underwriter commissions and associated costs. Upon the closing of the IPO, all outstanding shares of Mandatorily Redeemable Convertible Preferred Stock automatically converted into 7,094,748 shares of Common Stock. Also effective with the closing of the IPO, the Company was authorized to issue 5,000,000 shares of undesignated preferred stock, of which none were issued or outstanding at December 31, 1996 and 1995.

COMMON STOCK WARRANTS In June 1994, the Company entered into a distribution agreement, in connection with which it issued a warrant to purchase up to 798,748 shares of Common Stock at \$5.55 per share. The warrant had a fair value of \$200,000, which was charged to results of operations in the second quarter of 1994. The warrants will become exercisable in June 1999 and expire at the earlier of six years from the date of issuance

Harmonic Lightwaves

or the closing of a significant acquisition transaction, as defined in the warrant. Under certain conditions, the ability to exercise may be accelerated and the warrant may be exercisable as early as June 14, 1997. The Company has reserved 798,748 shares of Common Stock for issuance upon exercise of this warrant.

In 1993, the Company issued a warrant to purchase up to 22,222 shares of the Company's Common Stock at an exercise price of \$4.50 per share in conjunction with an equipment lease line facility. The fair value of the warrant was nominal, and the warrant expires at the earlier of seven years from the date of issuance or the merger or sale of the Company, meeting certain criteria. The Company has reserved 22,222 shares of Common Stock for issuance upon exercise of this warrant.

NOTE 6: 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 1,125,917 shares have been reserved for issuance. Following adoption of the 1995 Stock Plan (the "1995 Plan") at the effectiveness of the Company's IPO, no further grants have been, or will be, made under the 1988 Plan. Options granted under the 1988 Plan and the 1995 Plan are for periods not to exceed ten years. Exercise prices of incentive stock option grants under both plans must be at least 100% of the fair market value of the stock at the date of grant and for nonstatutory stock options must be at least 85% of the fair market value of the stock at the date of grant, all as determined by the Board of Directors. Under both plans, the options generally vest 25% at one year from date of grant, and an additional 1/48th per month thereafter. The Company has reserved 565,000 shares of Common Stock for issuance under the 1995 Plan.

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, 1993	46	872	\$ 0.38
Shares authorized	566	--	--
Options granted	(373)	373	2.36
Options exercised	--	(38)	0.35
Options canceled	60	(60)	1.11
	----	-----	-----
Balance at December 31, 1994	299	1,147	0.99
Shares authorized	351	--	--
Options granted	(276)	276	11.98
Options exercised	--	(252)	0.53
Options canceled	20	(20)	5.81
	----	-----	-----
Balance at December 31, 1995	394	1,151	3.65
Options granted	(340)	340	12.70
Options exercised	--	(208)	0.98
Options canceled	7	(48)	5.75
	----	-----	-----
Balance at December 31, 1996	61	1,235	6.52
	=====	=====	=====

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The following table summarizes information regarding stock options outstanding at December 31, 1996:

Range of Exercise Prices	Stock Options Outstanding			Stock Options Exercisable	
	Number Outstanding at December 31, 1996	Weighted-Average Remaining Contractual Life (Years)	Weighted-Average Exercise Price	Number Exercisable at December 31, 1996	Weighted-Average Exercise Price
(in thousands, except exercise price and life)					
\$ 0.30 - 1.20	386	5.4	\$ 0.41	372	\$ 0.41
1.80 - 4.65	264	7.5	2.42	154	2.31

7.20 - 13.50	447	8.7	10.74	94	11.18
14.13 - 22.75	138	9.4	17.52	22	17.71
-----			-----		
1,235			642		

DIRECTOR OPTION PLAN Effective upon the IPO, the Company adopted the 1995 Director Option Plan (the "Director Plan") and reserved 50,000 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. Grants of options to purchase 4,000 shares were made during 1996 under the Director Plan at exercise prices of \$10.00 - \$18.00. A grant of options to purchase 2,000 shares was made during 1995 under the Director Plan at an exercise price of \$13.50. At December 31, 1996, options to purchase 6,000 shares were outstanding, of which 4,999 shares were exercisable.

EMPLOYEE STOCK PURCHASE PLAN Effective upon the IPO, the Company adopted the 1995 Employee Stock Purchase Plan (the "Purchase Plan") and reserved 200,000 shares of Common Stock for issuance thereunder. 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. 48,977 and zero shares were issued under the Purchase Plan during 1996 and 1995, 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 market value at the grant dates, as prescribed in SFAS 123, the Company's net income and net income per share would have been as follows:

	1996	1995
-----		
(in thousands, except per share data)		
Net income:		
As reported	\$ 5,918	\$4,121
Pro forma	4,859	3,674
Net income per share:		
As reported	\$ 0.52	\$ 0.40
Pro forma	0.42	0.35
	-----	-----

The fair value of each option grant, under the 1988 Plan, 1995 Plan and Director Plan were estimated on the date of grant using the Black-Scholes option-pricing model with the following assumptions used for grants during 1996 and 1995: dividend yield of 0.0%; expected weighted average volatility of 47.5%; and expected weighted average lives of four years, during both years; and risk-free interest rates of 5.2% to 6.5% and 5.4% to 7.1% for options granted during 1996 and 1995, respectively.

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The fair value of the employees' purchase rights under the Employee Stock Purchase Plan was estimated using the Black-Scholes model with the following weighted average assumptions for 1996 and 1995: dividend yield of 0.0%; expected volatility of 47.5%; expected lives of two years during both years; and risk-free interest rates of 5.7% and 5.3% for 1996 and 1995, respectively.

RETIREMENT/SAVINGS PLAN Effective April 1, 1992, the Company implemented 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 may make discretionary contributions to the plan. To date, the Company has not made any contributions.

NOTE 7: INCOME TAXES

The Company incurred net operating losses in each year through December 31, 1994. Foreign income (losses) were not significant for all years presented. The provision for income taxes for the year ended December 31, 1996 consists of the following:

December 31,	1996	1995
-----		
(in thousands)		
Current:		
Federal	\$246	\$174
Foreign	41	16
State	24	27
	----	----
	\$311	\$217
	=====	=====

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

December 31,	1996	1995
-----		
(in thousands)		
Provision at statutory rate	\$ 2,118	\$ 1,475
State taxes, net of federal benefit	16	18
Utilization of net operating loss carryovers	(2,490)	(2,052)
Future benefits not currently recognized	429	567
Alternative minimum tax	162	116
Other	76	93
	-----	-----
	\$ 311	\$ 217
	=====	=====

Deferred tax assets comprise the following:

December 31,	1996	1995	1994
-----			
(in thousands)			
Net operating loss carryovers	\$ 1,964	\$ 3,960	\$ 6,354
Research and development carryovers	2,112	1,396	1,396
Capitalized research and development costs	254	931	615
Reserves not currently deductible	1,187	574	422
Other	12	746	229
	-----	-----	-----
Total deferred tax assets	5,529	7,607	9,016
Valuation allowance	(5,529)	(7,607)	(9,016)
	-----	-----	-----
Net deferred assets	\$ --	\$ --	\$ --
	=====	=====	=====



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The deferred tax assets valuation allowance at December 31, 1996, 1995 and 1994 is attributed to federal and state deferred tax assets. Management believes sufficient uncertainty exists regarding the realizability of these items such that a full valuation allowance has been recorded.

At December 31, 1996, the Company had approximately \$5,800,000 of net operating loss carryovers for federal tax reporting purposes available to offset future taxable income; such carryovers expire through 2009.

Under the Tax Reform Act of 1986, the amounts of and the benefit from net operating losses and research and development credits that can be carried forward may be impaired or limited in certain circumstances. Events which may cause changes in the Company's net operating loss and research and development credit carryovers include, but are not limited to, a cumulative stock ownership change of greater than 50%, as defined, over a three year period.

NOTE 8: RESEARCH AND DEVELOPMENT GRANT

In accordance with an agreement signed with the Israel-U.S. Binational Industrial Research and Development Foundation ("BIRD") in December 1994, the Company will obtain grants for a research and development project amounting to 50% of the actual expenditures incurred on the project subject to a maximum of \$560,000. The Company is not obligated to repay the grants regardless of the outcome of its development efforts; however, it is obligated to pay the BIRD royalties at the rate of up to 2%-5% of sales of any products or development resulting from such research, but not in excess of 150% of the grant. Grants earned of approximately \$140,000, and \$300,000 during 1996 and 1995, respectively, were offset against research and development expenses for the same period. The Company did not receive any funding and did not incur any significant expenditures on the project during 1994.

NOTE 9: GEOGRAPHIC INFORMATION AND SIGNIFICANT CUSTOMERS

Sales and purchase transactions are denominated in U.S. dollars. The Company has one manufacturing facility located in the United States. The Company has no significant assets located outside of the U.S.

International net sales were as follows:

Year Ended December 31,	1996	1995	1994
-----			
(in thousands)			
Americas (excluding U.S.)	\$12,216	\$ 8,281	\$ 3,688
Europe	12,214	9,819	5,038
Asia	10,342	7,331	1,669
	-----	-----	-----
	\$34,772	\$25,431	\$10,395
	=====	=====	=====

The Company sells to a significant number of its end users through distributors. In 1996, sales to three distributors represented 15%, 15% and 13% of total net sales, respectively. In 1995, sales to three distributors accounted for 22%, 15% and 15% of total net sales, respectively. In 1994, sales to five distributors represented 22%, 15%, 14%, 12% and 12%, respectively, of total net sales.

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NOTE 10: COMMITMENTS

The Company leases its facilities under noncancelable operating leases which expire at various dates through 2006. Total rent expense related to these operating leases were \$828,000, \$555,000, and \$468,000, for 1996, 1995 and 1994, respectively. Future minimum lease payments under noncancelable operating leases at December 31, 1996, were as follows:

(in thousands)

1997	\$ 160
1998	610
1999	1,304
2000	1,358
2001	1,375
Thereafter	6,171
	-----
	\$10,978
	=====

At December 31, 1996, the Company had prepaid approximately \$1,765,000 of rents and deposits under the terms of its 10 year lease agreement for the new corporate headquarters in Sunnyvale, California, which it occupied in August 1996. The Company has subleased a portion of its headquarters through July 1998. Under the terms of the sublease, the sublessee is required to make payments of \$382,000 and \$223,000 for 1997 and 1998, respectively.

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Report of  
INDEPENDENT ACCOUNTANTS

To The Board of Directors & Shareholders of Harmonic Lightwaves, Inc.,

In our opinion, the accompanying consolidated balance sheet and the related consolidated statements of operations, of stockholders'equity (deficit) and of cash flows present fairly, in all material respects, the financial position of Harmonic Lightwaves, Inc. and its subsidiary at December 31, 1996 and 1995, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1996, 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/ Price Waterhouse LLP  
PRICE WATERHOUSE LLP

San Jose, California  
January 21, 1997

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## HARMONIC LIGHTWAVES, INC. AND SUBSIDIARIES

## SUBSIDIARIES OF THE REGISTRANT

The following table shows certain information with respect to the active significant subsidiaries of the Company as of December 31, 1996.

NAME	STATE OR OTHER JURISDICTION OF INCORPORATION	PERCENT OF VOTING SECURITIES OWNED BY HARMONIC
Harmonic Lightwaves (Israel), Ltd.....	Israel	100%

## CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 [No. 33-94138] of Harmonic Lightwaves, Inc. of our report dated January 21, 1997, appearing on page 36 of the Annual Report to Shareholders which is incorporated in this Annual Report on Form 10-K.

/s/ Price Waterhouse LLP  
PRICE WATERHOUSE LLP

San Jose, California  
March 28, 1997

HARMONIC LIGHTWAVES, INC.

POWER OF ATTORNEY

See page 17 of Form 10-K.

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