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

FORM 10-K

(Mark One)

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

For the Fiscal Year Ended December 31, 2003

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

Commission File No. 0-25826

HARMONIC INC.

(Exact name of Registrant as specified in its charter)

Delaware

77-0201147

(State or other jurisdiction of incorporation
or organization)

(I.R.S. Employer Identification Number)

549 Baltic Way

Sunnyvale, CA 94089
(408) 542-2500

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

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

None

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

Common Stock, par value \$.001 per share
Preferred Share Purchase Rights

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

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

Yes No

Indicate by check mark whether the Registrant is an accelerated filer (as defined in Rule 12b-2 of the Exchange Act).

Yes No

Based on the closing sale price of the Common Stock on the NASDAQ National Market System on June 27, 2003, the aggregate market value of the voting Common Stock held by non-affiliates of the Registrant was \$224,520,293. 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 71,782,051 on February 27, 2004.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the Registrant's 2004 Annual Meeting of Stockholders (which will be filed with the Securities and Exchange Commission within 120 days of the end of the fiscal year ended December 31, 2003) are incorporated by reference in Part II and

Part III of this Form 10-K.

TABLE OF CONTENTS

PART I

Item 1. Business

Item 2. Properties

Item 3. Legal Proceedings

Item 4. Submission of Matters to a Vote of Security Holders

PART II

Item 5. Market for the Registrant's Common Stock and Related Security Holder Matters

Item 6. Selected Financial Data

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

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Item 8. Financial Statements and Supplementary Data

Item 9. Changes In and Disagreements With Accountants on Accounting and Financial Disclosure

Item 9A. Controls and Procedures

PART III

Item 10. Directors and Executive Officers of Registrant

Item 11. Executive Compensation

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

Item 13. Certain Relationships and Related Transactions

Item 14. Principal Accounting Fees and Services

PART IV

Item 15. Exhibits, Financial Statement Schedules and Reports on Form 8-K

SIGNATURES

EXHIBIT INDEX

EXHIBIT 10.9

EXHIBIT 10.10

EXHIBIT 10.25

EXHIBIT 21.1

EXHIBIT 23.1

EXHIBIT 31.1

EXHIBIT 31.2

EXHIBIT 32.1

EXHIBIT 32.2

PART I

Item 1. *Business*

OVERVIEW

We design, manufacture and sell digital video systems and fiber optic systems that enable network operators to provide a range of interactive and advanced digital services that include digital video, video-on-demand (VOD), high definition television, high-speed Internet access and telephony. Historically, most of our sales have been derived from sales of digital headend products and fiber optic transmission systems to cable television and satellite operators. We also derive a small portion of our sales from telephone companies that offer video services to their customers.

Harmonic was initially incorporated in California in June 1988 and reincorporated into Delaware in May 1995. Our principal executive offices are located at 549 Baltic Way, Sunnyvale, California 94089. Our telephone number is (408) 542-2500. Harmonic is organized as two operating divisions, Convergent Systems, or CS, for digital video systems, and Broadband Access Networks, or BAN, for fiber optic systems. Each division has its own management team directing its product development and marketing strategies and its customer service requirements. A separate sales force generally supports both divisions with appropriate product and market specialization as required.

INDUSTRY OVERVIEW

Demand for broadband services

The demand for broadband services has increased significantly in recent years due in large part to the dramatic growth of the Internet, which has facilitated commercial applications such as telecommuting and electronic commerce as well as its widespread use for communicating and accessing information. Rapid growth in the number of Internet users and the demand for more bandwidth-intensive video, voice and data content has strained existing communications networks and created bottlenecks, especially in the "last mile" of the communications infrastructure where homes connect to the local network. In addition, changes in the broadcast television industry have led to a proliferation of new television channels, including high definition channels, and to the development of interactive and on-demand television services which have begun to be provided on an individual, as opposed to a broadcast basis. The delivery to subscribers of television programming and Internet-based information and communication services is converging, driven in part by advances in technology and in part by changes in the regulatory and competitive environment.

Competition and deregulation

Recent and proposed regulatory reform has spurred competition among communication service providers worldwide to offer combinations of video, voice and data services. Historically, US long distance carriers and regional Bell operating companies, or RBOCs, provided only telephony services in the residential market. Cable television multiple system operators, or MSOs, provided video programming. Direct broadcast satellite, or DBS, services, which became available in the United States in the early nineties, also provided only video programming and were initially further restricted by regulation from making local television channels available in local markets. As a result, none of these operators had networks conducive to providing high-speed data services to residential subscribers, or any other services that they had not been previously allowed to provide. The Telecommunications Act of 1996, however, generally permitted service operators to enter each other's markets and to provide a variety of voice, video and data services. As a result, most cable companies have begun to offer broadband services, including broadcast digital video, VOD, internet access and telephony, over their cable systems in the last few years. Similarly, telephone companies, or telcos, are deploying various digital subscriber line, or DSL, technologies for high-speed data services over their existing copper networks. A small number of telcos also have deployed alternative delivery systems such as hybrid fiber coax, or HFC, fiber to the premises, or FTTP, and broadband wireless for data and video transmission, and a few have also deployed video services over their DSL networks. Following regulatory changes, including the "must-carry" regulations, DBS operators have now introduced local channels in a substantial number of markets and have also deployed, on a limited basis, Internet services to the home

[Table of Contents](#)

and small businesses. Additionally, in many major metropolitan areas, new carriers have entered the communications services market, although many have scaled back or halted network construction because of funding limitations caused by conditions in capital markets.

Similar deregulation of telecommunications and broadcasting abroad has fostered substantial growth and competition in foreign communications markets. Many countries have liberalized the provision of broadcast television and abolished or exposed to competition incumbent broadcast and telecom monopolies. Several have encouraged digital broadcasting in order to provide more channel capacity, higher quality video, and the provision of other digital services, such as data and voice. These developments have led to the establishment of new cable television networks, the launch of new DBS services and the introduction of broadband wireless services, the latter two particularly in countries with little wired infrastructure, or large remote areas where wired networks are not economical.

Our cable market

To address increasing competition and demand for high-speed broadband services, cable operators are introducing digital video, voice and data services in addition to traditional analog video. By offering bundled packages of broadband services, cable operators are seeking to obtain a competitive advantage over telephone companies and DBS providers and to create additional revenue streams. In order to provide high-speed Internet service, cable operators are deploying cable modems in an increasing number of their systems. According to the National Cable & Telecommunications Association, there were an estimated 15.0 million cable modem subscribers in the United States as of September 30, 2003. Similarly, cable operators have been upgrading and rebuilding their networks to offer digital video, which enables cable operators to provide more channels and better picture quality than analog video, allowing them to better compete against the increasing penetration of DBS services. In many areas, cable operators have rolled out new interactive services such as video-on-demand, or VOD, as well as high-definition television (HDTV) on their digital platforms. VOD allows subscribers to order, start, pause and stop selected movies and other content at their own discretion. Some cable operators are also upgrading and building out their networks to provide telephony services. These operators have rolled out telephone services in a number of major markets and some have also targeted certain business markets for the delivery of high-bandwidth services.

The ability of cable operators to deliver digital video, voice and high-speed data services on a broad scale, however, was constrained by the design of their legacy networks. These networks, which reach more than 90% of US homes with televisions, were built initially for one-way broadcast analog television and have required substantial upgrades to make them capable of reliably supporting two-way digital services, such as high-speed Internet access and telephony. Major US cable operators have indicated that the imminent completion of major network upgrades, which involve significant labor and construction costs, will lead to lower capital expenditures in the future. However, in addition to upgrading and extending network infrastructure with fiber optics, in order to provide new services it is necessary for cable operators to invest in digital headend equipment that can receive, process and distribute content from a variety of sources in increasingly complex headends. For example, VOD services require video storage equipment and servers, complemented by devices capable of routing, multiplexing and modulation for delivering signals to individual subscribers over an HFC network. Additionally, the provision of HDTV channels requires significantly more bandwidth than the equivalent number of standard definition channels. As these new services continue to attract increasing numbers of subscribers, we believe that cable operators will be required to continue upgrades of headends and the transmission network to handle the greater volume and complexity of traffic. We expect that, although total US cable capital expenditures may decline, operators will continue to invest capital to more effectively manage available bandwidth in the headend as well as make further network upgrades, such as node segmentation which is the support of fewer homes on a single optical node.

Our satellite market

Satellite operators around the world have established digital television services serving millions of subscribers. These services, which are capable of providing up to several hundred channels of high quality video, have become popular with consumers who want a wider choice of programming than has been typically available from traditional cable or broadcast television. The increasing availability of digital set top boxes and small low cost receiving dishes for subscribers' homes has facilitated the rollout of DBS services. DBS services, however, operate mostly in a one-way environment. Signals are

[Table of Contents](#)

transmitted from an uplink center to a satellite and then beamed to dishes located at subscribers' homes. This method is suited to the delivery of broadcast television, but does not lend itself easily to two-way services, such as Internet access.

As cable operators expand the number of channels offered and introduce services such as VOD and HDTV, DBS providers are seeking to protect and expand their subscriber base in a number of ways. DBS operators now have the right to provide local channels to local markets in the United States and have made available local channels in most of the largest metropolitan markets. In the United States, "must-carry" regulations generally require DBS operators to transmit all local channels in any markets they serve, thereby adding constraints on channel capacity. Advances in digital compression technology allow DBS operators to cost-effectively add these new channels and to further expand their video entertainment offerings.

Other markets

Telcos are also facing increasing competition and demand for high-speed residential broadband services. To date, their offerings in residential markets have been aimed mostly at providing Internet access in addition to traditional voice services. This is being accomplished principally by the deployment of DSL technology. Like the cable networks, the telcos' legacy networks are not well equipped to offer new services. The substantial bandwidth and distance limitations of the copper-based "last mile" have limited DSL deployment and present an even greater barrier to providing video services. Although cable companies and certain new broadband service providers have networks equipped to deliver video and are moving to capture data and voice customers, few telcos have to date offered video services as a competitive response. Video delivered over DSL lines has major bandwidth limitations, but the use of video compression technology at very low bit rates has allowed certain operators to introduce video services. The major RBOCs have also announced recently plans to build FTTP networks to offer bundled video, voice and data services. In the terrestrial broadcasting market, operators in many countries are now being required by regulation to convert from analog to digital transmission in order to free up broadcast spectrum. The conversion to digital often provides the opportunity to deliver new services, such as HDTV and data transmission. These broadcasters are faced with similar requirements to cable and satellite providers in that they need to convert analog signals to digital prior to transmission and must also effectively manage the available bandwidth to maximize their revenue streams.

The market opportunity

The construction of new networks or the upgrade and extension of existing networks to facilitate high-speed broadband video, voice and data services requires substantial expenditure and often the replacement of significant portions of the existing infrastructure. The economic success of incumbent and new operators will depend to a large extent on their ability to offer a choice of attractively priced packages of voice, video and data services to consumers, and to do so with high reliability and easy access to their network. As PC penetration continues to increase, we believe that interchanges of video and data via the Internet will increase. Personalized video services, such as video-on-demand, and the availability of TV sets equipped for HDTV, will require increasing amounts of bandwidth to the home in order to deliver maximum choice and flexibility. Compression of video and data to utilize effectively the available bandwidth, cost-effective transport of digital traffic within networks, and the construction of robust "fat pipes" for distribution of content to and from the home are all essential elements in operators' ability to maximize revenue and minimize capital and operating costs.

Current industry conditions

The telecommunications industry has been particularly impacted by the prolonged economic recession, adverse conditions in capital markets and financial difficulties in both the service and equipment sectors, including bankruptcies. Although large telecommunications service providers, such as WorldCom, now MCI, and the many troubled data and voice-oriented start-ups, have not been traditional customers of Harmonic, the cable, satellite and broadcast sectors have experienced significant financial problems. Many of our domestic and international customers have accumulated significant levels of debt and have begun or completed reorganizations and financial restructurings, including bankruptcies. In particular, Adelphia Communications, a major domestic cable operator, declared bankruptcy in June 2002. The stock prices of other domestic cable companies came under pressure following the Adelphia bankruptcy due to concerns about debt levels and

[Table of Contents](#)

capital expenditure requirements for new and expanded services, thereby making the raising of capital more difficult and expensive. In Europe, rapid consolidation of the cable industry through acquisition also led to significant levels of debt at the major MSOs, and companies such as NTL and UPC commenced bankruptcy proceedings. European digital broadcasters, such as ITV Digital, Kirsch and Quiero, have also filed for protection from creditors. We believe that the financial condition of many of our customers has stabilized or improved, but industry spending levels have not returned to historic levels. Furthermore, it is likely that further industry restructuring will take place via mergers or spin-offs, such as the Comcast acquisition of AT&T Broadband and its recent bid for The Walt Disney Company, the proposed spin-off of Time-Warner Cable from Time-Warner and the recent acquisition by The News Corporation Ltd. of an indirect controlling interest in Hughes Electronics, the parent company of DIRECTV. Regulatory issues, financial concerns and business combinations among our customers are likely to significantly affect the industry, capital spending plans, and our business for the foreseeable future.

PRODUCTS

Harmonic's products are organized in two principal groups, Convergent Systems and Broadband Access Networks. In addition, Harmonic provides technical support services to its customers worldwide.

Our digital video products provide broadband operators with the ability to accept a variety of signals from different sources, in different protocols, and to organize, manage and distribute this content to maximize use of the available bandwidth. Our encoders, multiplexers and modulators allow our customers to convert analog video to digital and to process this output into a stream which can be delivered over a fiber or wireless network to subscribers. Our edge device, or gateway, products enable operators to deliver customized broadcast or narrowcast on-demand services to their subscribers.

Our optical transmission products, node platforms and return path products, and element management hardware and software allow cable operators to deliver traditional broadcast video services while supporting the roll-out of emerging interactive services and managing the fiber network. Various types of optical transmitters enable cable operators to design network architectures which address the service and technical requirements of their systems. Our optical nodes are designed to incorporate a variety of modules which provide the operator with network flexibility and scalability to support increases in subscribers and the introduction of new services.

Convergent Systems products

The Convergent Systems division develops standards-based solutions that enable operators to increase the capacity of their broadband networks with advanced compression and stream processing technology. Our CS division's advanced digital video solutions enable satellite, cable, telco, broadcast, and wireless operators around the world to offer digital video services to their customers. As video, data and voice services continue to converge, effectively managing and processing these bandwidth-intensive applications becomes critical to the long-term viability of an operator's network.

Compression products

DiviCom encoders. This is a complete line of high performance encoders, which provide compression of video, audio and data channels. Using sophisticated signal pre-processing, noise reduction and encoding algorithms, these encoders produce high-quality video and audio at low data rates. Their compliance with widely adopted standards enables interoperability with other products and systems. The MV100 encoder, introduced in the fall of 2003, has the highest compression efficiency of our encoder family, while the MV450 is designed for encoding of high definition television signals.

Edge devices

Narrowcast Services Gateway. Our Narrowcast Services Gateway, or NSG, is a fully integrated server gateway, which interfaces with the output from a video server and integrates routing, multiplexing and modulation into a single package for the delivery of VOD services to subscribers over cable networks. The NSG is usually supplied with Gigabit Ethernet

[Table of Contents](#)

inputs, allowing the operator to use bandwidth efficiently by delivering IP signals from the headend to the edge of the network for subsequent modulation on to the HFC network.

Stream processing products

Media Node. Media Node is a flexible MPEG-2 networking, switching and multiplexing platform. In a broadcast facility, the video, audio and data streams must be combined or multiplexed into a single stream prior to transmission. Our multiplexing platform combines compressed streams from various sources into a single transport stream. Sources may include Harmonic encoders or third-party devices such as video servers.

Broadcast Network Gateway. Our Broadcast Network Gateway, or BNG, provides digital turnaround and remote modulation capability with a variety of flexible input and output options. The BNG allows operators to manage a variety of digital streams without expensive decoding and re-encoding.

Digital turnaround systems. Our digital turnaround system is a flexible, modular platform incorporating various cards for grooming, multiplexing and scrambling digital signals prior to transmission over broadband networks. It is especially well suited to "grooming" applications where a local operator wants to change a line-up of pre-packaged channels or content received from a regional or national feed. We also provide the Terayon "CherryPicker" digital stream management system under a reseller agreement with Terayon Communications.

Control and automation products

Modern digital networks are a diverse array of hardware and software components from a variety of vendors, using a number of network protocols and standards. Network management is a key tool that lets service providers monitor and control their networks. Our expertise in digital video, audio and data helps service providers with their network management requirements. Our product line includes a full range of software products, such as our NMX Digital Service Manager, that give service providers the ability to visually monitor their digital video infrastructure at an aggregate level, rather than just discrete pieces of hardware, reducing their operational costs.

Broadband Access Networks products

The Broadband Access Networks division applies its strengths in optics and electronics, including expertise with lasers, modulators, and radio frequency technology, to develop products which provide enhanced network reliability and allow broadband service providers to deliver advanced services, including two-way interactive services. We provide the operator with end-to-end capability in the fiber portion of the network.

Optical transmission systems

We offer MAXLink transmitters and optical amplifiers, PWRLink transmitters and DWDM systems for a wide range of optical transmission requirements.

MAXLink transmitters and optical amplifiers. The MAXLink transmitters and optical amplifiers operate at a wavelength of 1550 nm and serve long-haul applications and fiber dense architectures that are beyond the capability of shorter range 1310 nm transmitters. This system is suited to evolving cable networks employing such features as redundant rings, hub interconnects and broadcast layer transmission. The recently introduced MAXLink Plus further increases the channel capacity of cable and other networks and can transmit over distances in excess of 200 kilometers.

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

METROLink system. Our METROLink DWDM system allows operators to expand the capacity of a single strand of fiber and also to provide narrowcast services directly from the headend to nodes. This ability can significantly reduce the size

[Table of Contents](#)

of hubs and the associated building and equipment maintenance costs. By increasing the downstream and upstream capacity of existing optical fiber, METROLink can also eliminate the significant expense of laying additional fiber.

GIGALight. Our GIGALight is a DWDM system for the transport of Gigabit Ethernet traffic. It allows high-bandwidth services, such as VOD, to be carried on a single fiber and targeted to particular segments of the network by optical wavelength.

Optical nodes and return path products

We offer a number of optical nodes, return path transmitters and receivers to provide two-way transmission capability. Optical nodes are designed to allow the customer to add capacity and scale as the number of subscribers grows and new services are provided.

PWRBlazer optical nodes. Our family of PWRBlazer optical nodes supports network architectures which meet the varying demands for bandwidth delivered to a service area. By the addition of modules providing functions such as return path transmission and DWDM, our configurable nodes are easily segmented to handle increasing two-way traffic over a fiber network without major plant reconstruction.

Return path transmitters and receivers. Our return path transmitters support two-way transmission capabilities by sending video, voice and data signals from the optical node back to the headend. These transmitters are available for either analog or digital transport.

Network management

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

Technical services

We provide consulting, implementation and maintenance services to our customers worldwide, principally those which purchase CS division products or solutions. We draw upon our expertise in broadcast television, communications networking and compression technology to design, integrate and install complete solutions. We offer a broad range of services and support including program management, budget analysis, technical design and planning, parts inventory management, building and site preparation, integration and equipment installation, end-to-end system testing, comprehensive training and ongoing maintenance. Harmonic also has extensive experience in integrating our products with numerous third-party products and services.

CUSTOMERS

We sell our products to a variety of broadband communications companies. Set forth below is a representative list of our significant end-user and integrator/distributor customers based on net sales during 2003.

| United States | International |
|-------------------------|----------------------------|
| Adelphia Communications | Bell Express Vu |
| Cablevision | Canal Plus |
| Charter Communications | Hong Kong Cable Television |
| Comcast | NTL |
| Cox | Orbit Communications |
| DIRECTV | Siemens |
| EchoStar | Sumitomo/ BNMux |
| Fox Sports | Telefónica |
| Insight Communications | Telegeneve |
| RCN | Telewest |
| Sinclair Broadcasting | |
| Thales | |
| Time Warner Cable | |

Historically, a majority of our sales have been to relatively few customers, and due in part to the consolidation of ownership of cable television and direct broadcast satellite systems, we expect this customer concentration to continue in the foreseeable future. Net sales to our ten largest customers in 2003, 2002 and 2001 accounted for approximately 65%, 61% and 49% of net sales, respectively. In 2003, net sales to Comcast accounted for 32% of net sales. In 2002, net sales to Charter and Comcast accounted for 18% and 10% of net sales, respectively. If Comcast, which acquired AT&T Broadband in November 2002, and AT&T Broadband had been combined for all of 2002, total net sales to the combined company would have been 17% of net sales. In 2001, net sales to DIRECTV and Charter Communications represented 13% and 11% of net sales. Although we are attempting to broaden our customer base by penetrating new markets such as the telco and broadcast markets, we expect to see continuing industry consolidation and customer concentration due in part to the significant capital costs of constructing broadband networks. For example, Comcast acquired AT&T Broadband in November 2002, thereby creating the largest US cable operator, reaching approximately 22 million subscribers. In the DBS segment, The News Corporation Ltd. recently acquired an indirect controlling interest in Hughes Electronics, the parent company of DIRECTV. In addition, financial restructurings of companies such as Adelphia Communications and several European operators may lead to further industry consolidation. See "Factors That May Affect Our Future Results of Operations — Our Customer Base Is Concentrated And The Loss Of One Or More Of Our Key Customers Would Harm Our Business. The Loss Of Any Key Customer Would Have a Negative Effect on Our Business."

Sales to customers outside of the United States in 2003, 2002, and 2001 represented 29%, 29%, and 40% of net sales, respectively. We expect international sales to continue to account for a substantial portion of our net sales for the foreseeable future. International sales are subject to a number of risks, including changes in foreign government regulations and telecommunications standards, import and export license requirements, tariffs, taxes and other trade barriers, fluctuations in foreign currency exchange rates, difficulty in collecting accounts receivable, difficulty in staffing and managing foreign operations, managing distributor relations and political and economic instability. In addition, certain of our international customers have accumulated significant levels of debt and have recently announced, or are expected to announce, reorganizations and financial restructurings, including bankruptcy filings. International markets may not develop and we may not receive future orders to supply our products in international markets at rates equal to or greater than those experienced in recent periods. See "Factors That May Affect Our Future Results of Operations — We Depend On Our International Sales And Are Subject To The Risks Associated With International Operations, Which May Negatively Affect Our Operating Results."

SALES AND MARKETING

In the United States we sell our products principally through our own direct sales force which is organized geographically and by major customer and market to support customer requirements. We sell to international customers through our own direct sales force as well as independent distributors and integrators. Principal sales offices outside of the United States are located in the United Kingdom, France, and China. International distributors are generally responsible for importing the products and providing certain installation, technical support and other services to customers in their territory. Our direct sales force and distributors are supported by a highly trained technical staff including application engineers who work closely with operators to develop technical proposals and design systems to optimize system performance and economic benefits to operators. Technical support provides a customized set of services, as required, for ongoing maintenance, support-on-demand and training for our customers and distributors both in our facilities and on-site.

Our marketing organizations develop strategies for product lines and, in conjunction with our sales force, identify evolving technical and application needs of customers so that our product development resources can be most effectively and efficiently deployed to meet anticipated product requirements. Our marketing organizations are also responsible for setting price levels, demand forecasting and general support of the sales force, particularly at major accounts. We have many programs in place to heighten industry awareness of Harmonic and our products, including participation in technical conferences, publication of articles in industry journals and exhibiting at trade shows.

MANUFACTURING AND SUPPLIERS

We use third party contract manufacturers to assemble a substantial majority of subassemblies and modules for our products. Increasingly we are using such manufacturers to supply full turnkey products and we expect to subcontract an increasing number of tasks to third parties in the future. Our increasing reliance on subcontractors involves several risks, and we may not be able to obtain an adequate supply of components, subassemblies, modules and turnkey systems on a timely basis. In late 2003, we entered into a three-year agreement with Plexus Services Corp. as our primary contract manufacturer. The transition of our manufacturing requirements from certain current contract manufacturers to Plexus is in progress. We plan to complete the transition during the second quarter of 2004. Difficulties in managing relationships with current contract manufacturers, or problems encountered by Plexus or Harmonic in completing the transition, could impede our ability to meet our customers' requirements and adversely affect our operating results.

Our manufacturing operations consist primarily of final assembly and test of fiber optic systems for our BAN division. These processes are performed by highly trained personnel employing technologically advanced electronic equipment and proprietary test programs. The manufacturing of our products and subassemblies is a complex process and we cannot assure you that we will not experience production problems or manufacturing delays in the future. Because we utilize our own manufacturing facilities for the final assembly and test of our BAN division fiber optic systems, and because such manufacturing capabilities are not readily available from third parties, any interruption in our own or our contract manufacturers operations could materially and adversely affect our business, operating results, financial position and liquidity.

Many components, subassemblies and modules necessary for the manufacture or integration of our products are obtained from a sole supplier or a limited group of suppliers. Our reliance on sole or limited suppliers, particularly foreign suppliers, involves several risks, including a potential inability to obtain an adequate supply of required components, subassemblies or modules and reduced control over pricing, quality and timely delivery of components, subassemblies or modules. In particular, certain optical components have in the past been in short supply and are available only from a small number of suppliers, including sole source suppliers. While we expend considerable efforts to qualify additional optical component sources, consolidation of suppliers in the industry and the small number of viable alternatives have limited the results of these efforts. We do not generally maintain long-term agreements with any of our suppliers, although the agreement with Plexus is for a term of three years. Managing our supplier relationships is particularly difficult during time periods in which we introduce new products and during time periods in which demand for our products is increasing, especially if demand increases more quickly than we expect. An inability to obtain adequate deliveries or any other circumstance that would require us to seek alternative sources of supply could affect our ability to ship our products on a timely basis, which could damage relationships with current and prospective customers and harm

[Table of Contents](#)

our business. We attempt to limit this risk by maintaining safety stocks of certain components, subassemblies and modules. As a result of this investment in inventories, we have in the past and in the future may be subject to risk of excess and obsolete inventories, which could harm our business, operating results, financial position and liquidity. In this regard, our gross margins and operating results from the fourth quarter of 2000 through the third quarter of 2001 were adversely affected by excess and obsolete inventory charges of approximately \$49 million.

INTELLECTUAL PROPERTY

We currently hold 44 issued United States patents and 16 issued foreign patents, and have a number of patent applications pending. Although we attempt to protect our intellectual property rights through patents, trademarks, copyrights, licensing arrangements, maintaining certain technology as trade secrets and other measures, we cannot assure you that any patent, trademark, copyright or other intellectual property rights owned by us will not be invalidated, circumvented or challenged, that such intellectual property rights will provide competitive advantages to us or that any of our pending or future patent applications will be issued with the scope of the claims sought by us, if at all. We cannot assure you that others will not develop technologies that are similar or superior to our technology, duplicate our technology or design around the patents that we own. In addition, effective patent, copyright and trade secret protection may be unavailable or limited in certain foreign countries in which we do business or may do business in the future.

We believe that patents and patent applications are not currently significant to our business, and investors therefore should not rely on our patent portfolio to give us a competitive advantage over others in our industry. We believe that the future success of our business will depend on our ability to translate the technological expertise and innovation of our personnel into new and enhanced products. We generally enter into confidentiality or license agreements with our employees, consultants, vendors and customers as needed, and generally limit access to and distribution of our proprietary information. Nevertheless, we cannot assure you that the steps taken by us will prevent misappropriation of our technology. In addition, we have taken in the past, and may take in the future, legal action to enforce our patents and other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement or invalidity. Such litigation could result in substantial costs and diversion of resources and could negatively affect our business, operating results, financial position and cash flows.

In order to successfully develop and market certain of our planned products for digital applications, we may be required to enter into technology development or licensing agreements with third parties. Although many companies are often willing to enter into such technology development or licensing agreements, we cannot assure you that such agreements will be negotiated on terms acceptable to us, or at all. The failure to enter into technology development or licensing agreements, when necessary, could limit our ability to develop and market new products and could cause our business to suffer.

Harmonic's industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patent and other intellectual property rights. In particular, leading companies in the telecommunications industry have extensive patent portfolios. From time to time, third parties, including certain of these leading companies, have asserted and may assert exclusive patent, copyright, trademark and other intellectual property rights against us or our customers. Since December 2000, we have been in communication with several of our customers who have been contacted by one of these leading companies that believes certain of Harmonic's products require a license under a number of their patents. We currently are reviewing the identified patents to examine whether we consider a license necessary. While it is our understanding that the third party is willing to grant our customers a non-exclusive license under the identified patents, there can be no assurance that the terms of any offered license would be acceptable to our customers or that failure to obtain a license or the costs associated with any license would not cause our business, operating results, financial position and cash flows to be materially adversely affected. Also, you should read "Factors That May Affect Our Future Results of Operations — We Or Our Customers May Face Intellectual Property Infringement Claims From Third Parties" and "Legal Proceedings" for a description of the claim against us by Stanford University and Litton Systems.

BACKLOG

We schedule production of our systems based upon our backlog, open contracts, informal commitments from customers and sales projections. Our backlog consists of firm purchase orders by customers for delivery within the next twelve months as well as deferred revenue which is expected to be recognized within the next twelve months. At December 31, 2003, backlog, including deferred revenue, amounted to \$45.8 million, compared to \$23.1 million at December 31, 2002. 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, satellite and other operators or changes in specific customer requirements. In addition, due to weather-related seasonal factors and annual capital spending budget cycles at many major end-users, our backlog at December 31, 2003 or any other date, is not necessarily indicative of actual sales for any succeeding period.

COMPETITION

The markets for cable television fiber optics systems and digital video systems are extremely competitive and have been characterized by rapid technological change and declining average selling prices. Harmonic's competitors in the cable television fiber optics systems business include corporations such as C-Cor.net, Motorola and Scientific-Atlanta. In the digital video systems business, we compete broadly with vertically integrated system suppliers including Motorola, Scientific-Atlanta, Tandberg Television and Thomson Multimedia, and in certain product lines with Cisco and a number of smaller companies.

Many of our competitors are substantially larger and have greater financial, technical, marketing and other resources than Harmonic. Many of these large organizations are in a better position to withstand any significant reduction in capital spending by customers in these markets. They often have broader product lines and market focus and will therefore not be as susceptible to downturns in a particular market. In addition, many of our competitors have been in operation longer than we have and therefore have more long standing and established relationships with domestic and foreign customers. We may not be able to compete successfully in the future and competition may harm our business, operating results, financial position and cash flows.

If any of our competitors' products or technologies were to become the industry standard, our business could be seriously harmed. For example, US cable operators have to date mostly purchased proprietary digital systems from Motorola and Scientific-Atlanta. While certain operators have made limited purchases of the "open" systems provided by Harmonic, we cannot assure you that many of our digital products will find broad market acceptance with US cable operators. In addition, companies that have historically not had a large presence in the broadband communications equipment market have expanded their market presence through mergers and acquisitions. The continued consolidation of our competitors could have a significant negative impact on us. In the cable television fiber optics segment, C-Cor.net has acquired certain assets from Philips, and Scientific-Atlanta has acquired certain assets from Arris. Further, our competitors, particularly competitors of our digital and video broadcasting systems' business, may bundle their products or incorporate functionality into existing products in a manner that discourages users from purchasing our products or which may require us to lower our selling prices resulting in lower gross margins.

RESEARCH AND DEVELOPMENT

We have historically devoted a significant amount of our resources to research and development. Research and development expenses in 2003, 2002, and 2001 were \$35.1 million, \$40.8 million and \$51.3 million, respectively.

Our research and development program is primarily focused on developing new products and systems, and adding new features to existing products and systems. Our development strategy is to identify features, products and systems for both software and hardware that are, or expected to be, needed by our customers. Our current research and development efforts in the CS division are focused on video compression systems in MPEG2 and the newly introduced compression standards (MPEG4 or AVC and Microsoft WM9), MPEG over Internet Protocol (IP), VOD and switched broadcast and stream management software. The BAN division research and development efforts are focused in broadband optical and RF products that enable the transmission of video over fiber optic networks.

[Table of Contents](#)

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

EMPLOYEES

As of December 31, 2003, we employed a total of 557 people, including 197 in sales, service and marketing, 160 in research and development, 104 in manufacturing operations and 96 in a general and administrative capacity. There are 444 employees in the U.S. and 113 employees in foreign countries who are located in the Middle East, Europe and Asia. We also employ a number of temporary employees and consultants on a contract basis. During the last three years we have reduced our work force by approximately 44% primarily in response to a significant slowing of industry spending and the consequent adverse impact on our operating results. None of our employees is represented by a labor union with respect to his or her employment by Harmonic. We have not experienced any work stoppages and we consider our relations with our employees to be good. Our future success will depend, in part, upon our ability to attract and retain qualified personnel. Competition for qualified personnel in the broadband communications industry and in our immediate geographic area remains strong, and we cannot assure you that we will be successful in retaining our key employees or that we will be able to attract skilled personnel in the future.

Executive Officers of Registrant

The following table sets forth certain information regarding the executive officers of Harmonic and their ages as of February 27, 2004:

| <u>Name</u> | <u>Age</u> | <u>Position</u> |
|------------------|------------|-------------------------------------------------------------------------|
| Anthony J. Ley | 65 | Chairman of the Board of Directors, President & Chief Executive Officer |
| Robin N. Dickson | 56 | Chief Financial Officer |
| Patrick Harshman | 39 | President, Broadband Access Networks |
| Yaron Simler | 45 | President, Convergent Systems |
| Israel Levi | 64 | Senior Vice President, Operations and Quality |

Anthony J. Ley has served as Harmonic's President and Chief Executive Officer since November 1988. Mr. Ley was elected Chairman of the Board of Directors in February 1995. From 1963 to 1987, Mr. Ley was employed at Schlumberger, Limited 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. He is also named as an inventor in 29 patents, is a Fellow of the I.E.E.E. (U.K.) and a senior member of the I.E.E.E.

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

Patrick Harshman joined Harmonic in 1993 and has served as President of Broadband Access Networks Division since January 2001. Over the last nine years, Dr. Harshman has had management responsibilities for Harmonic's digital video and fiber optic transmission product lines and most recently served as Vice President of Marketing. Dr. Harshman received a Ph.D. in Electrical Engineering from the University of California, Berkeley, where his graduate research focused on nonlinear optical phenomena in optical communication systems.

[Table of Contents](#)

Yaron Simler joined Harmonic in 1992 and has served as President of Convergent Systems Division (CS) since February 2001. Previously, Dr. Simler served as Vice President of Marketing for the CS Division. Over the last 10 years, Dr. Simler has held several different positions within Harmonic, including Engineer, Technical Marketing Manager, Product Manager, Applications Engineer, International Sales Manager and Director of Applications and Technology. Dr. Simler received a Ph.D. in Electrical Engineering from the University of California, Berkeley with a focus in optical communications. He is also named as an inventor in 1 patent.

Israel Levi joined Harmonic in July 1989 and was appointed Senior Vice President of Operations and Quality in November 2002. Between January 2001 and October 2002, Mr. Levi served as the Senior Vice President of Systems and Technology. From May 1996 through December 2000, he was Vice President of Research & Development. Prior to joining Harmonic, Mr. Levi served in management of product development at DSC, a telecommunications systems company. From 1984 to 1988, Mr. Levi served as Director of CATV Products Division at Catel Communications, a telecommunications equipment manufacturer. Mr. Levi holds an M.S. in Electrical Engineering from Carleton University, Ottawa, Canada and a B.S. in Electrical Engineering from Technion-Israel Institute of Technology. He is also named as an inventor in 5 patents.

Available Information

Harmonic makes available free of charge on the Harmonic website the Company's annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after Harmonic files such material with, or furnishes it to, the Securities and Exchange Commission. The address of the Harmonic website is <http://www.harmonicinc.com>.

Item 2. *Properties*

Our principal operations and corporate headquarters are located in Sunnyvale, California. During the second quarter of 2001 we completed the relocation of the former DiviCom employees from facilities in Milpitas, California to the Sunnyvale campus. We also have a research and development center in Colorado, several sales offices in the United States, sales and support centers in the United Kingdom, France, and China, and a research and development center in Israel. Harmonic has entered into leases worldwide for approximately 500,000 square feet of space which expire at various dates through September 2010. Of the 440,000 square feet under lease, approximately 160,000 square feet is in excess of our requirements and we no longer occupy, do not intend to occupy, and plan to sublease. The estimated loss on subleases has been included in the excess facilities charges recorded in 2001 and 2002.

Item 3. *Legal Proceedings*

Shareholder Litigation

Between June 28 and August 25, 2000, several actions alleging violations of the federal securities laws by Harmonic and certain of its officers and directors (some of whom are no longer with Harmonic) were filed in or removed to the United States District Court for the Northern District of California. The actions subsequently were consolidated.

A consolidated complaint, filed on December 7, 2000, was brought on behalf of a purported class of persons who purchased Harmonic's publicly traded securities between January 19 and June 26, 2000. The complaint also alleged claims on behalf of a purported subclass of persons who purchased C-Cube securities between January 19 and May 3, 2000. In addition to Harmonic and certain of its officers and directors, the complaint also named C-Cube Microsystems Inc. and several of its officers and directors as defendants. The complaint alleged that, by making false or misleading statements regarding Harmonic's prospects and customers and its acquisition of C-Cube, certain defendants violated sections 10(b) and 20(a) of the Securities Exchange Act of 1934. The complaint also alleged that certain defendants violated section 14(a) of the Exchange Act and sections 11, 12(a)(2), and 15 of the Securities Act of 1933 by filing a false or misleading registration statement, prospectus, and joint proxy in connection with the C-Cube acquisition.

[Table of Contents](#)

On July 3, 2001, the Court dismissed the consolidated complaint with leave to amend. An amended complaint alleging the same claims against the same defendants was filed on August 13, 2001. Defendants moved to dismiss the amended complaint on September 24, 2001. On November 13, 2002, the Court issued an opinion granting the motions to dismiss the amended complaint without leave to amend. Judgment for defendants was entered on December 2, 2002. On December 12, 2002, plaintiffs filed a motion to amend the judgment and for leave to file an amended complaint pursuant to Rules 59(e) and 15(a) of the Federal Rules of Civil Procedure. On June 6, 2003, the Court denied plaintiffs' motion to amend the judgment and for leave to file an amended complaint. Plaintiffs filed a notice of appeal on July 1, 2003. Plaintiffs filed their opening brief on December 3, 2003. Defendants filed their answering briefs on March 2, 2004. Plaintiffs' optional reply brief is due fourteen days from service of the answering briefs. No hearing has been scheduled yet.

A derivative action purporting to be on behalf of Harmonic was filed against its then-current directors in the Superior Court for the County of Santa Clara on September 5, 2000. Harmonic also was named as a nominal defendant. The complaint is based on allegations similar to those found in the securities class action and claims that the defendants breached their fiduciary duties by, among other things, causing Harmonic to violate federal securities laws. The derivative action was removed to the United States District Court for the Northern District of California on September 20, 2000. All deadlines in this action were stayed pending resolution of the motions to dismiss the securities class action. On July 29, 2003, the Court approved the parties' stipulation to dismiss this derivative action without prejudice and to toll the applicable limitations period. The limitations period is tolled until fourteen days after (1) defendants provide plaintiff with a copy of the mandate issued by the Ninth Court in the securities action or (2) either party provides written notice of termination of the tolling period, whichever is first.

A second derivative action purporting to be on behalf of Harmonic was filed in the Superior Court for the County of Santa Clara on May 15, 2003. It alleges facts similar to those previously alleged in the securities class action and the federal derivative action. The complaint names as defendants former and current Harmonic officers and directors, along with former officers and directors of C-Cube Microsystems, Inc., who were named in the securities class action. The complaint also names Harmonic as a nominal defendant. The complaint alleges claims for abuse of control, gross mismanagement, and waste of corporate assets against the Harmonic defendants, and claims for breach of fiduciary duty, unjust enrichment, and negligent misrepresentation against all defendants. On July 22, 2003, the Court approved the parties' stipulation to stay the case pending resolution of the appeal in the securities class action. Although the parties initially agreed in principle to a dismissal without prejudice on similar terms as in the federal derivative action, after further discussion, the parties decided that the stay currently in place suffices to protect their respective interests.

Based on its review of the complaints filed in the securities class action, Harmonic believes that it has meritorious defenses and intends to defend itself vigorously. There can be no assurance, however, that Harmonic will prevail. No estimate can be made of the possible range of loss associated with the resolution of this contingency and accordingly, Harmonic has not recorded a liability. An unfavorable outcome of this litigation could have a material adverse effect on Harmonic's business, operating results, financial position and cash flows.

Other Litigation

On July 3, 2003, Stanford University and Litton Systems filed a complaint in U.S. District Court for the Central District of California alleging that optical fiber amplifiers incorporated into certain of Harmonic's products infringe U.S. Patent No. 4,859,016. This patent expired in September 2003. The complaint seeks injunctive relief, royalties and damages. Harmonic has not been served in the case. Harmonic is currently evaluating its position with respect to this patent and has engaged in discussions with the plaintiff regarding potential settlement of the matter. At this time, we are unable to determine whether we will be able to settle this litigation on reasonable terms or at all, nor can we predict the impact of an adverse outcome of this litigation if we elect to defend against it. No estimate can be made of the possible range of loss associated with the resolution of this contingency and accordingly, we have not recorded a liability associated with the outcome of a negotiated settlement or an unfavorable verdict in litigation. An unfavorable outcome of this matter could have a material adverse effect on Harmonic's business, operating results, financial position and cash flows.

Item 4. *Submission of Matters to a Vote of Security Holders*

No matters were submitted to a vote of stockholders during the fourth quarter of the year ended December 31, 2003.

PART II

Item 5. *Market for the Registrant's Common Stock and Related Security Holder Matters*

- (a) Harmonic's Common Stock has been quoted on the Nasdaq National Market under the symbol HLIT since Harmonic's initial public offering on May 22, 1995. The following table sets forth, for the periods indicated, the high and low sales price per share of the Common Stock as reported on the Nasdaq National Market:

| | High | Low |
|----------------|----------|--------|
| 2002 | | |
| First quarter | \$ 14.15 | \$9.38 |
| Second quarter | 12.20 | 2.60 |
| Third quarter | 3.62 | 1.10 |
| Fourth quarter | 3.52 | 1.01 |
| 2003 | | |
| First quarter | \$ 4.66 | \$2.30 |
| Second quarter | 5.43 | 3.27 |
| Third quarter | 6.85 | 3.18 |
| Fourth quarter | 9.35 | 5.44 |

- (b) *Holders of record:* At February 27, 2004 there were 521 stockholders of record of Harmonic's Common Stock.
- (c) *Dividends:* Harmonic has never declared or paid any dividends on its capital stock. Harmonic currently expects to retain future earnings, if any, for the use in the operation and expansion of its business and does not anticipate paying any cash dividends in the foreseeable future. Harmonic's line of credit includes covenants prohibiting the payment of dividends.
- (d) The disclosure required by Item 201(d) of Regulation S-K is set forth in the 2004 Proxy Statement under the caption "Equity Plan Information" and is incorporated herein by reference.

Item 6. *Selected Financial Data*

The data set forth below are qualified in their entirety by reference to, and should be read in conjunction with, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the Consolidated Financial Statements and related notes included elsewhere in this Annual Report on Form 10-K.

| | Year Ended December 31, | | | | |
|---------------------------------------------------|-------------------------|------------|------------|-------------|------------|
| | 2003 | 2002 | 2001 | 2000 | 1999 |
| (In thousands, except per share data) | | | | | |
| Consolidated Statement of Operations | | | | | |
| Data | | | | | |
| Net sales | \$ 182,276 | \$ 186,632 | \$ 203,810 | \$ 263,046 | \$ 184,075 |
| Gross profit(1) | 60,603 | 54,429 | 1,555 | 75,171 | 80,605 |
| Income (loss) from operations(1)(2) | (30,545) | (77,349) | (168,787) | (1,683,035) | 29,017 |
| Net income (loss)(1) | (29,433) | (76,918) | (166,407) | (1,654,008) | 23,680 |
| Basic net income (loss) per share | (0.47) | (1.29) | (2.84) | (34.06) | 0.84 |
| Diluted net income (loss) per share | (0.47) | (1.29) | (2.84) | (34.06) | 0.76 |
| Consolidated Balance Sheet Data | | | | | |
| Cash, cash equivalents and short-term investments | \$ 112,597 | \$ 49,158 | \$ 54,277 | \$ 99,669 | \$ 89,699 |
| Working capital | 95,389 | 31,246 | 66,608 | 194,618 | 129,416 |
| Total assets | 224,726 | 173,754 | 238,056 | 425,944 | 185,693 |
| Long term debt, including current portion | 1,656 | 2,572 | 2,746 | — | — |
| Stockholders' equity | 106,161 | 62,183 | 135,054 | 295,702 | 144,888 |

(1) The 2003 gross profit, loss from operations and net loss included credits of \$4.7 million for products sold during the year which had been written down in prior years. Operating expenses included credits of \$2.2 million from the sale of our bankruptcy claims in Adelphia Communications resulting in the reversal of previously recorded bad debt provisions, and a litigation settlement charge of \$2.7 million related to Power and Telephone Supply.

The 2002 gross profit, loss from operations and net loss included special charges to cost of sales totaling \$0.8 million for severance and other costs, and credits of \$6.9 million for product sold during the year which had been written down in prior years. Special charges to operating expenses totaled \$22.5 million for excess facilities costs, a bad debt provision of \$2.7 million for probable losses on receivables from Adelphia Communications, and severance and other costs of \$0.9 million.

The 2001 gross profit, loss from operations and net loss included special charges to cost of sales totaling \$40.0 million for inventory and fixed asset write-downs and \$0.9 million for severance and other costs. Special charges to operating expenses include \$30.1 million for excess facilities costs, \$2.4 million for fixed asset provisions and \$1.6 million for severance and other costs and special charges of \$0.6 million to other income and expense.

The 2000 loss from operations and net loss included special charges to operating expenses of approximately \$1.42 billion, consisting of \$1.38 billion for impairment of goodwill and other intangible assets and \$39.8 million for acquired in-process technology. Special charges to cost of sales totaled \$10.0 million for excess and obsolete inventories.

(2) Loss from operations for 2003, 2002, 2001 and 2000 included amortization of intangible assets of \$13.9 million, \$18.7 million, \$20.7 million and \$234.2 million, respectively.

See Notes 3 and 4 of Notes to Consolidated Financial Statements.

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

Overview

Harmonic designs, manufactures and sells digital video systems and fiber optic systems that enable network operators to provide a range of interactive and advanced digital services that include digital video, VOD, high definition television, high-speed Internet access and telephony. Historically, most of our sales have been derived from sales of digital headend products and fiber optic transmission systems to cable television and satellite operators. We also derive a small portion of our sales from telephone companies that offer video services to their customers.

Before 1997, almost all of our sales were derived directly or indirectly from sales of fiber optic transmission systems to cable television operators. We also offer digital headend products to enable delivery of digital video, voice and data over satellite and wireless networks and cable systems.

In order to further expand our digital systems capability, Harmonic acquired C-Cube Microsystems Inc. in May 2000, pursuant to the terms of a merger agreement dated October 27, 1999. Under the terms of the merger agreement, C-Cube spun off its semiconductor business as a separate publicly traded company, which was acquired by LSI Logic in June 2001. C-Cube merged into Harmonic and Harmonic therefore acquired C-Cube's DiviCom business, which provides encoding products and systems for digital television. Harmonic has been organized into two operating divisions, Broadband Access Networks, or BAN, for fiber optic systems and Convergent Systems, or CS, for digital headend systems.

Harmonic's net sales decreased 2% in 2003, 8% in 2002 and 23% in 2001. Although industry capital spending has been and continues to be generally weak as compared to the pre-merger levels achieved by Harmonic and Divicom in 1999 and early 2000, we believe that the sequential quarterly sales increases in 2003 reflected a firmer industry capital spending environment worldwide which favorably impacted Harmonic. We believe that the improved environment was reflected by an increase of 36% in Harmonic's net sales in the second half of 2003 as compared with the second half of 2002. We believe that this improvement in the industry capital spending environment is, in part, a result of the intensifying competition between cable and satellite operators to offer more channels of digital video and new services, such as VOD and high-definition television, and an overall improvement in the cable industry capital market. Also, we believe that the improvement in the industry capital spending environment is a result of the completion of previously announced pending business combinations, financial restructurings and regulatory issues. In particular, Adelphia Communications, which had declared bankruptcy in June 2002, has obtained debtor-in-possession financing of \$1.5 billion, allowing it to resume certain capital expenditure programs.

In the fourth quarter of 2003, Harmonic issued 10,350,000 shares of common stock in a public offering at a price of \$7.40 per share. The net proceeds to Harmonic were approximately \$71.4 million, which is net of underwriters' discounts and commissions of approximately \$4.2 million and related legal, accounting, printing and other expenses totaling approximately \$0.9 million. The net proceeds from the offering are being used for general corporate purposes, including payment of existing liabilities, research and development, the development or acquisition of new products or technologies, equipment acquisitions, general working capital and operating expenses. The offering was made pursuant to our Registration Statement on Form S-3 (File No. 333-84430) filed with the SEC on March 18, 2002, as amended on April 16, 2002 and as declared effective on April 18, 2002, and the related prospectus supplement filed with the SEC on October 29, 2003.

Our operating results for 2003 included a charge to general and administrative expense of approximately \$2.7 million related to the settlement of litigation with Power and Telephone Supply (P&T) in release of all outstanding claims. These claims arose from the cancellation of purchase orders on P&T by one of its end-customers in 2000. The settlement charge is net of the value of products returned and other costs. Harmonic paid \$1.0 million of the settlement on July 24, 2003 and paid the balance of \$1.8 million on January 15, 2004. Our operating results for 2003 also included credits to operating expenses in 2003 totaling approximately \$2.2 million from the sale of our bankruptcy claims in Adelphia Communications resulting in the reversal of previously recorded bad debt provisions, credits of \$4.7 million for products sold during the year which had been written down in prior years.

[Table of Contents](#)

During 2002, certain of our domestic and international customers had accumulated significant levels of debt and announced reorganizations and financial restructurings, including bankruptcy filings. In particular, Adelphia Communications declared bankruptcy in June 2002, and as a result, we recorded only nominal revenue from Adelphia since the first quarter of 2002 and established a \$2.9 million provision in the second quarter of 2002 for probable losses on receivables and deferred costs of sales determined to no longer be recoverable. Adelphia accounted for less than 2% of net sales in 2002. The stock prices of other domestic cable companies also came under pressure following the Adelphia Communications bankruptcy due to concerns about debt levels and capital expenditure requirements for new and expanded services. We believe that these capital market concerns about the cable industry and the associated pressures on capital spending contributed to the 31% decrease in sales during the second half of 2002 compared to the first half of 2002. In addition, spending by our domestic satellite customers and European customers was weak in 2002, particularly in the second half of 2002. We believe that this was principally because of pending business consolidations, financial restructurings and regulatory issues. For example, we believe that the regulatory review of the proposed acquisition of DIRECTV by EchoStar depressed spending in 2002, particularly in the second half of 2002. During the fourth quarter of 2002 the companies ultimately called off the proposed merger due to federal government opposition, and in December 2003, The News Corporation Ltd. acquired an indirect controlling interest in Hughes Electronics, the parent of DIRECTV.

As a result of uncertain market conditions and lower sales during the second half of 2002, we implemented a series of cost control measures that included workforce reductions totaling approximately 120 employees during the second half of 2002. Harmonic recorded severance charges of \$1.5 million during the second half of 2002 related to the work force reductions. This followed a workforce reduction of approximately 30% during 2001 for which we recorded severance and other costs of \$2.5 million at the time. These actions reduced headcount from over 1000 at the end of 2000 to 587 at the end of 2002.

In light of our reduced headcount, difficult business conditions, and a weak local commercial real estate market, we reassessed our accrual for the costs of excess facilities and recorded a charge of \$22.5 million during the third quarter of 2002. We changed our estimates with regard to the expected timing and amount of sublease income due to the substantial and growing surplus of vacant space in the San Francisco Bay Area. The excess facilities charge recorded during the third quarter of 2002 was for facilities that we no longer occupied, do not intend to occupy, plan to sublease, and followed charges of \$30.1 million recorded for excess facilities in 2001 when the initial accruals were established. The review performed in the third quarter of 2003 resulted in the excess facilities liability being decreased by \$3.3 million due to a revision in the assumptions as to the unoccupied portion of a building. This revision was offset by a correction of straight-line rent expense of \$2.3 million as a result of a lease extension on another building. This lease extension was a condition of leasing three additional buildings at corporate headquarters and resulted in all leases terminating in September 2010. Because the effect of the correction on any quarter or year was not material to these results of operations and financial position, the non-cash adjustment was recorded in the current year. In the event we are unable to achieve expected levels of sublease rental income, we will need to revise our estimate of the liability, which could materially impact our financial position, liquidity, cash flows and results of operations.

Our operating results in 2001 also included charges of \$39.2 million for excess and obsolete inventories and \$3.3 million for fixed asset impairment. The provisions for excess and obsolete inventories resulted from significant reductions in the demand for our products, principally BAN division products. In accordance with our policy, we wrote down inventory levels in excess of our demand forecasts.

Historically, a majority of our net sales have been to relatively few customers, and due in part to the consolidation of ownership of cable television and direct broadcast satellite systems, we expect this customer concentration to continue for the foreseeable future. In 2003, sales to Comcast accounted for 32% of net sales. In 2002, sales to Charter Communications and Comcast accounted for 18% and 10% of net sales, respectively. If Comcast, which acquired AT&T Broadband in November 2002, and AT&T Broadband had been combined for all of 2002, total revenues would have been 17% of net sales. DIRECTV and Charter Communications represented 13% and 11% of net sales in 2001.

In 2003, 2002, and 2001, sales of BAN products accounted for approximately 38%, 41%, and 37% of net sales, respectively, while CS products accounted for approximately 62%, 59%, and 63% of net sales, respectively.

[Table of Contents](#)

Sales to customers outside of the United States in 2003, 2002, and 2001 represented 29%, 29%, and 40% of net sales, respectively. A significant portion of international sales are made to distributors and system integrators, which are generally responsible for importing the products and providing installation and technical support and service to customers within their territory. We expect international sales to continue to account for a significant portion of our net sales for the foreseeable future.

Harmonic often recognizes a significant portion of its revenues in the last month of the quarter. Harmonic establishes its expenditure levels for product development and other operating expenses based on projected sales levels, and expenses are relatively fixed in the short term. Accordingly, variations in timing of sales can cause significant fluctuations in operating results. In addition, because a significant portion of Harmonic's business is derived from orders placed by a limited number of large customers, the timing of such orders can also cause significant fluctuations in our operating results. Harmonic's expenses for any given quarter are typically based on expected sales and if sales are below expectations, our operating results may be adversely impacted by our inability to adjust spending to compensate for the shortfall.

Critical Accounting Policies, Judgments and Estimates

The preparation of financial statements and related disclosures requires Harmonic to make judgments, assumptions and estimates that affect the reported amounts of assets and liabilities, the disclosure of contingencies and the reported amounts of revenue and expenses in the financial statements and accompanying notes. Material differences may result in the amount and timing of revenue and expenses if different judgments or different estimates were made. See Note 1 of Notes to Consolidated Financial Statements for details of Harmonic's accounting policies. Critical accounting policies, judgments and estimates which we believe have the most significant impact on Harmonic's financial statements are set forth below:

- Revenue recognition;
- Allowances for doubtful accounts, returns and discounts;
- Valuation of inventories;
- Impairment of long-lived assets;
- Restructuring costs and accruals for excess facilities;
- Assessment of the probability of the outcome of current litigation; and
- Accounting for income taxes.

Revenue Recognition

Harmonic's principal sources of revenue are from product sales, solution sales, services and maintenance contracts. Harmonic recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been provided, the sale price is fixed or determinable, collectibility is reasonably assured, and risk of loss and title have transferred to the customer.

Revenue from product sales, excluding the revenue generated from service-related solutions, which are discussed below, is generally recognized upon shipment, or once all applicable criteria have been met. Allowances are provided for estimated returns and discounts. Such allowances are adjusted periodically to reflect actual and anticipated experience.

Revenue on solution sales, which principally consist of and include the design, manufacture, test, integration and installation of equipment to the specifications of Harmonic's customers, or acquired from third parties to be integrated

[Table of Contents](#)

with Harmonic's products, is generally recognized using the percentage of completion method. Under the percentage of completion method, revenue recognized reflects the portion of the anticipated contract revenue that has been earned, equal to the ratio of labor costs expended to date to anticipated final labor costs, based on current estimates of labor costs to complete the project. If the estimated costs to complete a project exceed the total contract amount, indicating a loss, the entire anticipated loss is recognized. Harmonic records revenue that is earned and recognized in excess of amounts invoiced on fixed price contracts as accounts receivables-unbilled.

Revenue from services, which is primarily from maintenance agreements, is generally recognized ratably as the services are performed or based on contractual terms. The costs associated with services are recognized as incurred. Maintenance services are recognized ratably over the maintenance term, which is typically one year. The costs associated with these maintenance services are recognized as incurred. The unrecognized revenue portion of maintenance agreements billed is recorded as deferred revenue.

Deferred revenue includes billings in excess of revenue recognized, net of deferred cost of sales, and invoiced amounts remain deferred until applicable revenue recognition criteria are met. Our total deferred revenue was \$11.7 million and \$9.0 million as of December 31, 2003 and 2002, respectively.

Certain agreements also include multiple deliverables or elements for products, software and/or services. Harmonic recognizes revenue from these agreements based on the relative fair value of the products and services as they are delivered. The determination of the fair value of the elements is based on a number of factors, including the amount charged to other customers for products or services, price lists, or other relevant information. If an undelivered element is essential to the functionality of the delivered element or required under the terms of the agreement to be delivered concurrently, we defer the revenue on the delivered element until that undelivered element is delivered. In the absence of fair value for an undelivered element, the arrangement is accounted for as a single unit of accounting, resulting in a deferral of revenue recognition for the delivered elements until the undelivered elements are fulfilled.

For certain products where software is more than an incidental, but less than essential component of the hardware, or where software has been identified as a separate element included in a multiple element arrangement, we recognize software license revenue in accordance with Statement of Position No. 97-2, "Software Revenue Recognition" ("SOP 97-2"), as amended by Statement of Position No. 98-9, "Software Revenue Recognition With Respect To Certain Transactions" ("SOP 98-9"). SOP 98-9 requires recognition of revenue using the "residual method" when (1) there is vendor specific objective evidence of the fair values of all undelivered elements in a multiple element arrangement that is not accounted for using long-term contract accounting; (2) vendor specific objective evidence of the fair value does not exist for one or more of the delivered elements in the arrangement; and (3) all revenue recognition criteria of SOP 97-2, other than the requirement for vendor specific objective evidence of the fair value of each delivered element of the arrangement, are satisfied.

Revenue recognition in each period is dependent on our application of these accounting policies. If we believe that any of the conditions to recognize revenue has not been met, we defer revenue recognition. Our application of percentage-of-completion accounting is subject to our estimates of labor costs to complete each project. In the event that actual results differ from these estimates or we adjust these estimates in future periods, our operating results, financial position and cash flows for a particular period could be adversely affected.

Allowances for Doubtful Accounts, Returns and Discounts

We establish allowances for doubtful accounts, returns and discounts based on credit profiles of our customers, current economic trends, contractual terms and conditions and historical payment, return and discount experience, as well as for known or expected events. If there were to be a deterioration of a major customer's creditworthiness or if actual defaults, returns or discounts were higher than our historical experience, our operating results, financial position and cash flows could be adversely affected. At December 31, 2003, our allowances for doubtful accounts, returns and discounts totaled \$5.3 million.

Valuation of Inventories

Harmonic states inventories at the lower of cost or market. We establish provisions for excess and obsolete inventories after evaluation of historical sales and future demand and market conditions, expected product lifecycles and current inventory levels. In the event that we adjust our estimates, such as future demand and expected product lifecycles, our operating results, financial position and cash flows could be adversely affected.

Impairment of Long-lived Assets

We perform an evaluation of the carrying value of intangibles and long-lived assets whenever we become aware of an event or change in circumstances that would indicate potential impairment. We evaluate the recoverability of other intangible assets and long-lived assets on the basis of undiscounted cash flows from each asset group. If impairment is indicated, provisions for impairment are determined based on fair value, principally using discounted cash flows. Changes in industry and market conditions or the strategic realignment of our resources could result in an impairment of identified intangibles or long-lived assets. There can be no assurance that future impairment tests will not result in a charge to earnings. At December 31, 2003, our net balances for goodwill and intangible assets totaled \$1.8 million and \$18.5 million, respectively.

Restructuring Costs and Accruals for Excess Facilities

For restructuring activities initiated prior to December 31, 2002 we recorded restructuring costs when Harmonic committed to an exit plan and significant changes to the exit plan were not likely. To determine our excess facility accruals we estimate expected sublease rental income on each excess facility. In the event we are unable to achieve expected levels of sublease rental income, we will need to revise our estimate of the liability which could materially impact our operating results, financial position and cash flows. For restructuring activities initiated after December 31, 2002 we follow Statement of Financial Accounting Standards, or SFAS No. 146, "Accounting for Costs Associated with Exit or Disposal Activities," as discussed under New Accounting Pronouncements below. At December 31, 2003, our balances for restructuring costs and excess facilities totaled \$34,000 and \$34.7 million, respectively.

Assessment of the Probability of the Outcome of Current Litigation

Harmonic records accruals for loss contingencies when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Based on Harmonic's review of the complaints filed in the securities class action and other pending litigation, Harmonic believes that it either has meritorious defenses with respect to those actions and claims or is unable to predict the impact of an adverse action and, accordingly, no loss contingencies have been accrued. There can be no assurance, however, that we will prevail. An unfavorable outcome of these legal proceedings could have a material adverse effect on our business, financial position, operating results and cash flows.

Accounting for Income Taxes

In preparation of our financial statements, we estimate our income taxes for each of the jurisdictions in which we operate. This involves estimating our actual current tax exposures and assessing temporary differences resulting from differing treatment of items, such as reserves and accruals, for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheet. Based on our judgment that the likelihood that our deferred tax assets will be recovered from future taxable income is not assured, we established a valuation allowance of \$63.0 million in 2001 which was increased to \$104.9 million in 2002 and to \$123.6 million in 2003. At December 31, 2003 we have fully reserved for our net deferred tax assets related to temporary differences, net operating loss and tax credit carryforwards.

Significant management judgment is required in determining our provision for income taxes, our deferred tax assets and liabilities and our future taxable income for purposes of assessing our ability to realize any future benefit from our deferred tax assets. In the event that actual results differ from these estimates or we adjust these estimates in future periods, our operating results and financial position could be materially affected.

[Table of Contents](#)

Results of Operations

Harmonic's historical consolidated statements of operations data for each of the three years ended December 31, 2003, 2002, and 2001 as a percentage of net sales, are as follows:

| | Fiscal Year Ended December 31, | | |
|-------------------------------------------|--------------------------------|-------|-------|
| | 2003 | 2002 | 2001 |
| Net sales | 100% | 100% | 100% |
| Cost of sales | 67 | 71 | 99 |
| Gross profit | 33 | 29 | 1 |
| Operating expenses: | | | |
| Research and development | 19 | 22 | 25 |
| Selling, general and administrative | 27 | 43 | 53 |
| Amortization of intangibles | 4 | 5 | 6 |
| Total operating expenses | 50 | 70 | 84 |
| Loss from operations | (17) | (41) | (83) |
| Interest and other income, net | 1 | — | 1 |
| Loss before income taxes | (16) | (41) | (82) |
| Provision for (benefit from) income taxes | — | — | — |
| Net loss | (16)% | (41)% | (82)% |

Net Sales

Harmonic's consolidated, segment and international net sales as compared with the prior year, for each of the three years ended December 31, 2003, 2002, and 2001, is presented in the table below. Also presented is the related dollar and percentage increase (decrease) in consolidated, segment, and international net sales as compared with the prior year, for each of the two years ended December 31, 2003 and 2002.

| Segmental Sales Data: | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|-----------------------------------------------|----------------------------------------------------------------------|-------------|------------|
| | 2003 | 2002 | 2001 |
| Convergent Systems | \$ 113,207 | \$ 109,718 | \$ 129,038 |
| Broadband Access Networks | 69,069 | 76,914 | 74,772 |
| Net sales | \$ 182,276 | \$ 186,632 | \$ 203,810 |
| Convergent Systems Increase (decrease) | \$ 3,489 | \$ (19,320) | |
| Broadband Access Networks Increase (decrease) | (7,845) | 2,142 | |
| Total Increase (decrease) | \$ (4,356) | \$ (17,178) | |
| Convergent Systems Percent change | 3.2% | (15.0%) | |
| Broadband Access Networks Percent change | (10.2%) | 2.9% | |
| Total Percent change | (2.3%) | (8.4%) | |

Net sales increased in the CS division in 2003 compared to 2002, principally due to stronger spending by domestic cable operators in the second half of 2003 primarily for the roll-out of new services, such as VOD. The decrease in the BAN division net sales in 2003 compared to 2002 was due to reduced capital spending by select cable operators, in particular Charter Communications and Adelphia Communications, during the first half of 2003. We believe this reduced spending was caused by a tightening of the financial markets, and capital markets concerns about the cable industry in the aftermath of the Adelphia bankruptcy filing.

[Table of Contents](#)

The CS division decrease in 2002 compared to 2001 was principally attributable to significantly lower sales of encoders to domestic satellite customers. We believe these lower net sales were due, in part, to purchasing delays created by the uncertainty caused by the regulatory review of the proposed acquisition of DIRECTV by Echostar which was ultimately called off in the fourth quarter of 2002. The lower sales to satellite customers were partially offset by higher sales of the Narrowcast Services Gateway, or NSG, for VOD deployments to cable operators. The increase in BAN division net sales in 2002 compared to 2001 was due to higher sales of node products, partially offset by lower transmitter sales, and generally higher unit volumes offset by lower pricing.

| Geographic Sales Data: | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|-----------------------------------|----------------------------------------------------------------------|-------------|------------|
| | 2003 | 2002 | 2001 |
| U.S. | \$ 130,226 | \$ 133,222 | \$ 121,479 |
| International | 52,050 | 53,410 | 82,331 |
| Net sales | \$ 182,276 | \$ 186,632 | \$ 203,810 |
| U.S. Increase (decrease) | \$ (2,996) | \$ 11,743 | |
| International Increase (decrease) | (1,360) | (28,921) | |
| Total Increase (decrease) | \$ (4,356) | \$ (17,178) | |
| U.S. Percent change | (2.2%) | 9.7% | |
| International Percent change | (2.5%) | (35.1%) | |
| Percent change | (2.3%) | (8.4%) | |

Net sales in the U.S. decreased in 2003 compared to 2002 primarily due to lower BAN division sales, partially offset by higher CS division sales. The BAN division sales decrease in 2003 was due to reduced capital spending by select cable operators, in particular Charter Communications and Adelphia Communications, during the first half of 2003. The higher CS division sales in 2003 was due to stronger spending by domestic cable operators primarily for the roll-out of new services, such as VOD. The international sales decrease in 2003 compared to 2002 reflects the continuing depressed market conditions, which impacted both divisions.

The increase in U.S. net sales in 2002 compared to 2001 was primarily due to higher sales in both divisions. The higher CS division sales were due to increases in product sales of the Narrowcast Services Gateway, or NSG, for VOD deployments to cable operators. The higher BAN division sales were due to increased sales of node products, partially offset by lower transmitter sales, and generally higher unit volumes, offset by lower average selling prices. The significant decrease in international sales in 2002 compared to 2001 was due principally to depressed market conditions, particularly in Europe, which impacted both divisions.

Gross Profit

Harmonic's gross profit and gross profit as a percentage of consolidated net sales, for each of the three years ended December 31, 2003, 2002, and 2001 are presented in the table below. Also presented is the related dollar and percentage increase (decrease) in gross profit as compared with the prior year, for each of the two years ended December 31, 2003 and 2002.

| | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|---------------------|----------------------------------------------------------------------|-----------|----------|
| | 2003 | 2002 | 2001 |
| Gross profit | \$ 60,603 | \$ 54,429 | \$ 1,555 |
| As a % of net sales | 33.2% | 29.2% | 0.8% |
| Increase (decrease) | \$ 6,174 | \$ 52,874 | |
| Percent change | 11.3% | 3,400.3% | |

[Table of Contents](#)

The increase in gross profit in 2003 compared to 2002 was primarily attributable to a change in the product mix and improvements in factory efficiencies. Also contributing to the higher gross profit in 2003 were cost control measures, including the full year effect of reductions in headcount in the factory and technical service and support organizations, associated with work force reductions during the second half of 2002. These factors, which contributed to higher gross margins in 2003 compared to 2002, were partially offset by lower average selling prices and lower sales of \$2.2 million, from \$4.7 million in 2003 compared to \$6.9 million in 2002, related to products sold for which the costs basis had been written down in prior years.

The increase in gross profit in 2002 compared to 2001 was primarily attributable to special charges in 2001 of \$40.9 million, principally for excess and obsolete inventories, and credits in 2002 of \$6.9 million related to products sold for which the cost basis had been written down in prior years. Also contributing to the higher gross profit in 2002 were cost control measures, including a reduction in headcount in the factory and technical service and support organizations, associated with work force reductions throughout 2001 and during the second half of 2002. These factors, that contributed to higher gross margins in 2002 compared to 2001, partially offset by lower average selling prices and a higher proportion of BAN division revenue which historically has carried lower margins.

Research and Development

Harmonic's research and development expense and the expense as a percentage of consolidated net sales for each of the three years ended December 31, 2003, 2002, and 2001 are presented in the table below. Also presented is the related dollar and percentage increase (decrease) in research and development as compared with the prior year, for each of the two years ended December 31, 2003 and 2002.

| | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|--------------------------|----------------------------------------------------------------------|------------|----------|
| | 2003 | 2002 | 2001 |
| Research and development | \$35,107 | \$40,829 | \$51,319 |
| As a % of net sales | 19.3% | 21.9% | 25.2% |
| Increase (decrease) | \$(5,722) | \$(10,490) | |
| Percent change | (14.0%) | (20.4%) | |

The decrease in research and development expense in 2003 compared to 2002 was primarily due to the full year effect of the reduction in headcount associated with the workforce reductions in 2002 and ongoing cost control measures. The major expenditures affected were payroll costs and depreciation, although most expenses within research and development have been reduced in the last two years.

The decrease in research and development expense in 2002 compared to 2001 was primarily due to a reduction in headcount associated with the workforce reductions over the past two years and ongoing cost control measures.

Selling, General and Administrative

Harmonic's selling, general and administrative expense and the expense as a percentage of consolidated net sales, for each of the three years ended December 31, 2003, 2002, and 2001 are presented in the table below. Also presented is the related dollar and percentage increase (decrease) in selling, general and administrative as compared with the prior year, for each of the two years ended December 31, 2003 and 2002.

[Table of Contents](#)

| | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|-------------------------------------|----------------------------------------------------------------------|------------|-----------|
| | 2003 | 2002 | 2001 |
| Selling, general and administrative | \$ 48,309 | \$ 81,427 | \$106,340 |
| As a % of net sales | 26.5% | 43.6% | 52.2% |
| Increase (decrease) | \$(33,118) | \$(24,913) | |
| Percent change | (40.7%) | (23.4%) | |

The decrease in selling, general and administrative expense in 2003 compared to 2002 was due to lower bad debt expenses caused by the sale of our bankruptcy claims in Adelpia Communications resulting in the reversal of previously recorded bad debt provisions of approximately \$2.2 million and the full year effect of work force reductions in 2002. In addition, selling, general and administrative expense in 2002 included excess facilities charges of \$22.5 million.

The decrease in selling, general and administrative expense in 2002 compared to 2001 was due principally to work force reductions and to lower promotional costs. In addition, selling, general and administrative expenses in 2001 included excess facilities charges of \$30.1 million compared to \$22.5 million in 2002.

Amortization of Intangibles

Harmonic's amortization of intangibles expense and the expense as a percentage of consolidated net sales, for each of the three years ended December 31, 2003, 2002, and 2001 are presented in the table below. Also presented is the related dollar and percentage increase (decrease) in amortization of intangibles as compared with the prior year, for each of the two years ended December 31, 2003 and 2002.

| | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|-----------------------------|----------------------------------------------------------------------|-----------|----------|
| | 2003 | 2002 | 2001 |
| Amortization of intangibles | \$ 7,732 | \$ 9,522 | \$12,683 |
| As a % of net sales | 4.2% | 5.1% | 6.2% |
| Increase (decrease) | \$(1,790) | \$(3,161) | |
| Percent change | (18.8%) | (24.9%) | |

The decrease in 2003 compared to 2002 was due principally to the intangibles arising from the Cogent acquisition becoming fully amortized. Harmonic expects to record approximately \$7.7 million in amortization of intangibles in operating expenses in 2004.

The decrease in 2002 compared to 2001 was due principally to cessation of goodwill amortization in accordance with adoption of SFAS No. 142 "Goodwill and Other Intangible Assets" effective January 1, 2002.

Interest and Other Income, Net

Harmonic's interest and other income, net, and interest and other income, net as a percentage of consolidated net sales, for each of the three years ended December 31, 2003, 2002, and 2001 are presented in the table below. Also presented is the related dollar and percentage increase (decrease) in interest and other income, net as compared with the prior year, for each of the two years ended December 31, 2003 and 2002.

| | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|--------------------------------|----------------------------------------------------------------------|----------|----------|
| | 2003 | 2002 | 2001 |
| Interest and other income, net | \$ 1,412 | \$ 931 | \$ 1,574 |
| As a % of net sales | 0.8% | 0.5% | 0.8% |
| Increase (decrease) | \$ 481 | \$ (643) | |
| Percent change | 51.7% | (40.9%) | |

The increase in 2003 compared to 2002 was due primarily to foreign exchange gains of \$1.1 million in 2003 compared to zero in 2002 as a result of a weaker dollar which were partially offset by lower interest income of \$0.7 million in 2003 compared to \$1.4 million in 2002.

The decrease in 2002 compared to 2001 was due principally to lower interest income, and to a lesser extent higher interest expense on borrowings under Harmonic's equipment term loan. The decrease in interest income was due to lower average cash and short-term investment balances as well as lower interest rates.

Income Taxes

Harmonic's provision for (benefit from) income taxes, and provision for (benefit from) income taxes as a percentage of consolidated net sales, for each of the three years ended December 31, 2003, 2002, and 2001 are presented in the table below. Also presented is the related dollar and percentage increase (decrease) in provision for (benefit from) income taxes as compared with the prior year, for each of the two years ended December 31, 2003 and 2002.

| | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|-------------------------------------------|----------------------------------------------------------------------|----------|----------|
| | 2003 | 2002 | 2001 |
| Provision for (benefit from) income taxes | \$ 300 | \$ 500 | \$ (806) |
| As a % of net sales | 0.2% | 0.3% | (0.4%) |
| Increase (decrease) | \$ (200) | \$ 1,306 | |
| Percent change | (40.0%) | 162.0% | |

Our effective rate was 1.0% in 2003, 0.7% in 2002 and (0.5%) in 2001. Harmonic recorded a provision for income taxes of \$0.3 million in 2003 principally due to foreign income taxes despite a loss before income taxes of \$29.1 million. In 2002, Harmonic recorded a provision for income taxes of \$0.5 million principally due to foreign income taxes despite a loss before income taxes of \$76.4 million. The valuation allowance was increased from \$63.0 million in 2001 to \$104.9 million in 2002 and to \$123.6 million in 2003. The valuation allowance is for the full amount of the net deferred tax asset, because realization of any future benefit from deductible temporary differences, net operating losses and tax credit carry forwards was uncertain at December 31, 2003 and 2002. Harmonic recorded a benefit from income taxes of only \$0.8 million despite a loss before income taxes of \$167.2 million in 2001. This was principally due to the establishment of the valuation allowance for the full amount of Harmonic's net deferred tax assets of \$63.0 million.

Segments

Harmonic's management uses income or loss from segment operations as its measure of segment profitability. Income or loss from segment operations excludes intangible amortization expense, corporate expenses, including excess facilities charges, and interest and other income, net. See Note 12 of Notes to Consolidated Financial Statements.

Fluctuations in net sales by operating segment are discussed more extensively in the section above entitled, *Net Sales*.

Harmonic's loss from segment operations and the loss as a percentage of consolidated net sales, for each of the three years ended December 31, 2003, 2002, and 2001 are presented in the table below. Also presented is the related dollar

[Table of Contents](#)

and percentage increase (decrease) in segment operations results as compared with the prior year, for each of the two years ended December 31, 2003 and 2002.

| Convergent Systems (CS) | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|------------------------------|----------------------------------------------------------------------|------------|------------|
| | 2003 | 2002 | 2001 |
| Loss from segment operations | \$(4,398) | \$(15,649) | \$(36,254) |
| As a % of segment net sales | (3.9%) | (14.3%) | (28.1%) |
| Increase (decrease) | \$ 11,251 | \$ 20,605 | |
| Percent change | 71.9% | 56.8% | |

The improved CS segment results in 2003 compared to 2002 were due to a 3% increase in sales, higher gross margins from changes in product mix and lower material costs, and lower operating expenses, resulting primarily from lower headcount. CS segment results included credits of \$0.5 million in 2003 related to products sold in 2003 for which the cost basis had been written down in prior years. Despite a 15% decrease in CS segment net sales in 2002, the loss from segment operations decreased compared to 2001, principally due to lower headcount and other cost control measures. In addition, CS results included special charges for excess and obsolete inventories in 2001 of \$10.6 million and credits of \$1.0 million in 2002 related to products sold in 2002 for which the cost basis had been written down in prior years.

| Broadband Access Networks (BAN) | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|------------------------------------------|----------------------------------------------------------------------|-----------|------------|
| | 2003 | 2002 | 2001 |
| Income or (loss) from segment operations | \$ 1,102 | \$(4,033) | \$(60,103) |
| As a % of segment net sales | 1.6% | (5.2%) | (80.4%) |
| Increase (decrease) | \$ 5,135 | \$ 56,070 | |
| Percent change | 127.3% | 93.3% | |

The improved BAN segment results in 2003 compared to 2002 were due to higher gross margins from improved product mix, improved factory absorption, and lower operating expenses in all areas, resulting primarily from lower headcount. In addition, BAN segment results included credits of \$4.2 million in 2003 related to products sold in 2003 for which the cost basis had been written down in prior years. The improved results in 2002 compared to 2001 were due to a 3% increase in sales, improved factory absorption and lower operating expenses, resulting primarily from lower headcount. In addition, BAN results included special charges in 2001 of \$28.6 million for excess and obsolete inventories, and credits of \$5.9 million in 2002 related to products sold in 2002 for which the cost basis had been written down in prior years.

Liquidity and Capital Resources

| | Fiscal Year Ended December 31, (in thousands, except percentages) | | |
|-----------------------------------------------------|----------------------------------------------------------------------|------------|------------|
| | 2003 | 2002 | 2001 |
| Cash, cash equivalents and short-term investments | \$ 112,597 | \$ 49,158 | \$ 54,277 |
| Net cash used in operating activities | \$ (5,559) | \$ (5,404) | \$(24,768) |
| Net cash provided by (used in) investing activities | \$(46,369) | \$(12,668) | \$ 38,580 |
| Net cash provided by financing activities | \$ 72,335 | \$ 3,596 | \$ 9,006 |

As of December 31, 2003, cash, cash equivalents and short-term investments totaled \$112.6 million, compared to \$49.2 million as of December 31, 2002. Cash used in operations was \$5.6 million in 2003 compared to \$5.4 million in 2002. The increased use of cash in operations in 2003 was primarily due to increased accounts receivable, lower excess facilities liabilities and reduced non-cash charges for depreciation and amortization, which was substantially offset by a significantly reduced net loss, higher accounts payable and other non-current liabilities. Cash used in operations was \$5.4 million in 2002 compared to \$24.8 million in 2001. The reduced use of cash in operations in 2002 was due to a significantly reduced loss that was nearly offset by non-cash charges for depreciation and amortization and net cash provided through improved working capital management.

[Table of Contents](#)

On November 3, 2003, Harmonic completed a public offering of 9.0 million shares of its common stock at a price of \$7.40 per share. The net proceeds were approximately \$62.0 million, which is net of underwriters' fees of \$3.7 million, and related legal, accounting, printing and other expenses totaling approximately \$0.9 million. In connection with this offering, the underwriters exercised their option to purchase 1.35 million additional shares of common stock at \$7.40 per share on November 12, 2003 to cover over-allotments which resulted in additional net proceeds of approximately \$9.4 million. The net proceeds from the offering are being used for general corporate purposes, including payment of existing liabilities, research and development, the development or acquisition of new products or technologies, equipment acquisitions, general working capital and operating expenses.

Under the terms of the merger agreement with C-Cube, Harmonic is generally liable for C-Cube's pre-merger tax liabilities. As of December 31, 2003, approximately \$20.8 million of pre-merger tax liabilities remain outstanding and are included in accrued liabilities. Harmonic expects to negotiate final settlement and make payment of these obligations to a variety of taxing authorities or to LSI Logic during 2004. To the extent that these obligations are finally settled for less than the amount provided, Harmonic is required, under the terms of the merger agreement, to refund the difference to LSI Logic. Accordingly, we expect a significant reduction in cash, cash equivalents and short-term investments during 2004. In the event these liabilities are more than \$20.8 million, LSI is obligated to indemnify Harmonic for the additional amount.

Additions to property, plant and equipment were \$3.4 million during 2003 compared to \$3.3 million in 2002 and \$29.1 million in 2001. The increase in 2003 was due primarily to the acquisition of test equipment. The decrease in 2002 was due principally to expenditures during 2001 for leasehold improvements and related furniture, fixtures and equipment in connection with relocation of former DiviCom employees to new facilities in Sunnyvale, and the implementation of a new enterprise resource planning software system. Harmonic currently expects capital expenditures to be less than \$5 million during 2004.

Harmonic has a bank line of credit facility with Silicon Valley Bank, which provides for borrowings of up to \$13.5 million, including \$3.5 million for equipment under a secured term loan. This facility, which was amended and restated in December 2003, expires in December 2004, and contains financial and other covenants including the requirement for Harmonic to maintain unrestricted cash, cash equivalents and short-term investments, net of credit extensions, of not less than \$65.0 million. If Harmonic is unable to maintain this cash, cash equivalents and short-term investments balance or satisfy the additional affirmative covenant requirements, Harmonic would be in noncompliance with the facility. In the event of noncompliance by Harmonic with the covenants under the facility, Silicon Valley Bank would be entitled to exercise its remedies under the facility which include declaring all obligations immediately due and payable, and disposing of the collateral if obligations were not repaid. At December 31, 2003, Harmonic was in compliance with the covenants under this line of credit facility. The December 2003 amendment resulted in the company paying a fee of approximately \$8 thousand and requiring payment of approximately \$30 thousand of additional fees if the company does not maintain an unrestricted deposit of \$25.0 million with the bank. Future borrowings pursuant to the line bear interest at the bank's prime rate (4.0%) or prime plus 1.0% (prime rate plus 0.5%-1.5% for equipment borrowings) depending upon the Company's total cash position and previous six months' revenue. Borrowings are payable monthly and are collateralized by all of Harmonic's assets. As of December 31, 2003, \$1.7 million was outstanding under the equipment term loan portion of this facility of which \$1.0 million was borrowed during 2003. The term loan is payable monthly, including principal and interest at 4.0% per annum on outstanding borrowings as of December 31, 2003 and matures at various dates through January 2007. Other than standby letters of credit and guarantees, there were no other outstanding borrowings or commitments under the line of credit facility as of December 31, 2003.

As of December 31, 2002, Harmonic's bank line of credit facility contained financial and other covenants including a minimum cash covenant established in the November 2002 modification which required the Company to maintain at least 35% of its cash, cash equivalents and short-term investments with the bank.

[Table of Contents](#)

Future payments under contractual obligations, and other commercial commitments, as of December 31, 2003, were as follows (in thousands):

| Contractual Obligations | Payments Due by Period | | | | |
|--------------------------------------|-------------------------|------------------|-----------------|-----------------|------------------|
| | Total Amounts Committed | 1 year or less | 2-3 years | 4-5 years | Over 5 years |
| Long-Term Debt | \$ 1,656 | \$ 1,027 | \$ 629 | — | — |
| C-Cube Pre-Merger Tax Liabilities | 20,800 | 20,800 | — | — | — |
| Operating Leases(1) | 78,392 | 10,053 | 21,009 | 24,921 | 22,409 |
| Inventory Purchase Commitments | 34,927 | 34,927 | — | — | — |
| Total Contractual Obligations | \$ 135,775 | \$ 66,807 | \$21,638 | \$24,921 | \$ 22,409 |

| Other Commercial Commitments | Amount of Commitment Expiration Per Period | | | | |
|-------------------------------------|--------------------------------------------|-----------------|-----------|-----------|--------------|
| | Total Amounts Committed | 1 year or less | 2-3 years | 4-5 years | Over 5 years |
| Standby Letters of Credit | \$ 2,802 | \$ 2,802 | — | — | — |
| Indemnifications(2) | — | — | — | — | — |
| Guarantees | — | — | — | — | — |
| Total Commercial Commitments | \$ 2,802 | \$ 2,802 | — | — | — |

(1) Operating lease commitments include \$35.3 million of accrued excess facilities costs.

(2) Harmonic indemnifies some of its suppliers and customers for specified intellectual property rights pursuant to certain parameters and restrictions. The scope of these indemnities varies, but in some instances, includes indemnification for damages and expenses (including reasonable attorneys' fees). There have been no claims for indemnification and, accordingly, no amounts have been accrued in respect of the indemnification provisions at December 31, 2003.

Harmonic's cash and investment balances increased \$78.3 million in the fourth quarter of 2003 after decreasing \$14.9 million through the first three quarters of 2003. We currently believe that our existing liquidity sources, including the proceeds from the stock offering we completed in the fourth quarter of 2003, and our bank line of credit will satisfy our requirements for at least the next twelve months, including the final settlement and payment of C-Cube's pre-merger tax liabilities. However, we may need to raise additional funds if our expectations or estimates change or prove inaccurate, or to take advantage of unanticipated opportunities or to strengthen our financial position. The completed stock offering in the fourth quarter of 2003 was part of a registration statement on Form S-3 declared effective by the SEC in April 2002. The Form S-3 registration statement remains effective and Harmonic continues to have the ability to use the registration statement to issue various types of securities, including common stock, preferred stock, debt securities, and warrants to purchase common stock from time to time, up to an aggregate of approximately \$73 million, subject to market conditions and our capital needs.

In addition, from time to time, we review potential acquisitions that would complement our existing product offerings, enhance our technical capabilities or expand our marketing and sales presence. Any future transaction of this nature could require potentially significant amounts of capital or could require us to issue our stock and dilute existing stockholders. If adequate funds are not available, or are not available on acceptable terms, we may not be able to take advantage of market opportunities, to develop new products or to otherwise respond to competitive pressures.

Our ability to raise funds may be adversely affected by a number of factors relating to Harmonic, as well as factors beyond our control, including increased market uncertainty surrounding the ongoing U.S. war on terrorism, as well as conditions in capital markets and the cable and satellite industries. There can be no assurance that any financing will be available on terms acceptable to us, if at all.

New Accounting Pronouncements

In November 2002, the Emerging Issues Task Force (“EITF”) reached a consensus on Issue No. 00-21, “Revenue Arrangements with Multiple Deliverables.” EITF Issue No. 00-21 provides guidance on how to account for arrangements that involve the delivery or performance of multiple products, services and/or rights to use assets. Harmonic adopted EITF Issue No. 00-21 effective June 28, 2003, and the adoption did not have a significant effect on the Company’s financial position, results of operations, or cash flows.

In January 2003, the Financial Accounting Standards Board (“FASB”) issued FASB Interpretation No. 46 (“FIN 46”), “Consolidation of Variable Interest Entities”, which addresses accounting for the assets, liabilities and activities of another entity. Prior to the issuance of FIN 46, a company generally included another entity in its consolidated financial statements only if it controlled the entity through voting interests. FIN 46 now requires a variable interest entity, as defined in FIN 46, to be consolidated by a company if that company is subject to a majority of the risk of loss from the variable interest entity activities or is entitled to receive a majority of the entity’s residual returns or both. FIN 46 also requires disclosures about variable interest entities that the company is not required to consolidate but in which it has a significant variable interest. The consolidation requirements of FIN 46 apply immediately to variable interest entities created after January 31, 2003 and to older entities in the first fiscal year or interim period beginning after June 15, 2003, subsequently delayed to December 31, 2003. Certain of the disclosure requirements apply to all financial statements issued after January 31, 2003, regardless of when the variable interest entity was established. The adoption of FIN 46 had no effect on the Company’s financial position, results of operations, or cash flows.

In April 2003, the FASB issued SFAS No. 149, “Amendment of Statement 133 on Derivative Instruments and Hedging activities.” SFAS No. 149 amends and clarifies the accounting for derivative instruments, including certain derivative instruments embedded in other contracts, and for hedging activities under SFAS No. 133, “Accounting for Derivative Instruments and Hedging Activities.” Harmonic adopted SFAS No. 149 effective June 28, 2003, and the adoption had no effect on the Company’s financial position, results of operations, or cash flows.

In May 2003, the FASB issued SFAS No. 150, “Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity.” SFAS No. 150 requires that certain financial instruments, which under previous guidance were accounted for as equity, must now be accounted for as liabilities. The financial instruments affected include mandatorily redeemable stock, certain financial instruments that require or may require the issuer to buy back some of its shares in exchange for cash or other assets and certain obligations that can be settled with shares of stock. Harmonic adopted SFAS No. 150 effective June 28, 2003, and the adoption had no effect on the Company’s financial position, results of operations, or cash flows.

In August 2003, the EITF reached a consensus on Issue No. 03-05, “Applicability of SOP 97-2 to Non-Software Deliverables in an Arrangement Containing More-Than-Incidental Software.” EITF Issue No. 03-05 provides guidance on accounting for arrangements that include software and non-software deliverables. Software-related elements include software products and services and non-software deliverables for which the related software is essential to its functionality. The Company adopted the provisions of EITF Issue No. 03-05 for revenue arrangements entered into after August 13, 2003. The adoption did not have a significant impact on the Company’s financial position, results of operations, or cash flows.

In December 2003, the Securities and Exchange Commission (“SEC”) issued Staff Accounting Bulletin No. 104 (“SAB 104”). SAB 104 revises or rescinds portions of the interpretative guidance included in Topic 13 of the codification of staff accounting bulletins. The primary purpose of SAB 104 was to remove multiple element guidance in SAB 101 that is superseded by and potentially in conflict with EITF Issue No. 00-21. The Company adopted the provisions of SAB No. 104 effective December 17, 2003. The adoption did not have a significant impact on the Company’s financial position, results of operations, or cash flows.

[Table of Contents](#)

Factors That May Affect Future Results of Operations

We Depend On Cable And Satellite Industry Capital Spending For A Substantial Portion Of Our Revenue And Any Decrease Or Delay In Capital Spending In These Industries Would Negatively Impact Our Resources, Operating Results And Financial Condition and Cash Flows.

Prior to the merger with C-Cube Microsystems Inc., or C-Cube, in May 2000, almost all of Harmonic's historic sales had been derived from sales to cable television operators and we expect these sales to constitute a significant portion of net sales for the foreseeable future. Almost all of the DiviCom business' historic sales had been derived from sales to satellite operators, telephone companies and cable operators. Demand for our products will depend on the magnitude and timing of capital spending by cable television operators, satellite operators, broadcasters and telephone companies for constructing and upgrading of their systems.

These capital spending patterns are dependent on a variety of factors, including:

- access to financing;
- annual budget cycles;
- the impact of industry consolidation;
- the status of federal, local and foreign government regulation of telecommunications and television broadcasting;
- overall demand for communication services and the acceptance of new video, voice and data services;
- evolving industry standards and network architectures;
- competitive pressures, including pricing pressures;
- discretionary customer spending patterns; and
- general economic conditions.

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

- uncertainty related to development of digital video and cable modem industry standards;
- delays associated with the evaluation of new services and system architectures by many cable television operators;
- emphasis on generating revenue from existing customers by cable television operators instead of new construction or network upgrades;
- proposed business combinations by our customers and regulatory review thereof;
- economic and financial conditions in domestic and international markets; and
- bankruptcies and financial restructuring of major customers.

The prolonged economic recession, the financial difficulties of certain of our customers and changes in our customers' deployment plans adversely affected our business in the latter part of 2001, throughout 2002 and in the first half of 2003. Two of our major domestic customers, Adelphia Communications and Winfirst, declared bankruptcy during the first half of 2002, while NTL, a major international customer, emerged from bankruptcy in 2002. Furthermore, we believe that our net sales to satellite customers were adversely affected by the uncertainty related to the prolonged regulatory review of the

[Table of Contents](#)

proposed acquisition of DIRECTV by EchoStar in 2002. These events, coupled with uncertain and volatile capital markets, also pressured the market values of domestic cable operators and restricted their access to capital. This reduced access to funding for new and existing customers caused delays in the timing and scale of deployments of our equipment and also resulted in the postponement or cancellation of certain projects by our customers. Several customers also canceled new projects or delayed new orders to allow them to reduce inventory levels that were in excess of their deployment requirements. We believe that these factors contributed to decreased net sales in both our CS division and our BAN division during the second half of 2002 and the first half of 2003 compared to the first half of 2002.

We believe that the financial condition of many of our customers has stabilized or improved, and our net sales increased sequentially in the second, third and fourth quarters of 2003. However, despite the improvement, our quarterly net sales during these quarters were lower than the first and second quarters of 2002, and European spending remains generally weak. Furthermore, another economic downturn or other factors could cause additional financial difficulties among our customers, and customers whose financial condition has stabilized may not purchase new equipment at levels we have seen in the past. Continued financial difficulties among our customers would adversely affect our operating results and financial condition. Also, The News Corporation Ltd. recently acquired an indirect controlling interest in Hughes Electronics, the parent company of DIRECTV. We cannot currently predict the impact of The News Corporation Ltd.'s control of DIRECTV on our future sales. Furthermore, Comcast, our largest customer, recently announced a bid for The Walt Disney Company, and we cannot predict the impact of this bid on our net sales to Comcast. As a result, we cannot assure you that our net sales growth will continue.

Major US cable operators have indicated that the imminent completion of major network upgrades, which involve significant labor and construction costs, will lead to lower capital expenditures in the future. If our product portfolio and product development plans do not position us well to capture an increased portion of the capital spending of US cable operators, our revenue may decline and our operating results would be adversely affected.

Our Customer Base Is Concentrated And The Loss Of One Or More Of Our Key Customers Would Harm Our Business. The Loss Of Any Key Customer Would Have A Negative Effect On Our Business.

Historically, a majority of our sales have been to relatively few customers, and due in part to the consolidation of ownership of cable television and direct broadcast satellite systems, we expect this customer concentration to continue in the foreseeable future. Sales to our ten largest customers in 2003, 2002, and 2001 accounted for approximately 65%, 61% and 49% of net sales, respectively. Although we are attempting to broaden our customer base by penetrating new markets such as the telecommunications and broadcast markets and expand internationally, we expect to see continuing industry consolidation and customer concentration due in part to the significant capital costs of constructing broadband networks. For example, Comcast acquired AT&T Broadband in November 2002, thereby creating the largest U.S. cable operator, reaching approximately 22 million subscribers. In the DBS segment, The News Corporation Ltd. recently acquired an indirect controlling interest in Hughes Electronics, the parent company of DIRECTV. In addition, financial restructurings of companies such as Adelphia Communications and several European operators may lead to further industry consolidation. In 2003, sales to Comcast accounted for 32% of net sales. In 2002, sales to Charter Communications and Comcast accounted for 18% and 10% of net sales. If Comcast and AT&T Broadband had been combined for all of 2002, total revenues would have been 17% of net sales. Comcast recently announced a bid for The Walt Disney Company, and we cannot predict what effect this bid will have on our net sales to Comcast. The loss of Comcast or any other significant customer or any reduction in orders by Comcast or any significant customer, or our failure to qualify our products with a significant customer could adversely affect our business, operating results and liquidity. In this regard sales to Charter Communications were significantly lower in 2003 than in 2002, both in absolute dollars and as a percentage of revenue, as they have significantly reduced capital spending. The loss of, or any reduction in orders from, a significant customer would harm our business.

[Table of Contents](#)

Our Operating Results Are Likely To Fluctuate Significantly And May Fail To Meet Or Exceed The Expectations Of Securities Analysts Or Investors, Causing Our Stock Price To Decline.

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

- the level and timing of capital spending of our customers, both in the U.S. and in foreign markets;
- changes in market demand;
- the timing and amount of orders, especially from significant customers;
- the timing of revenue from systems contracts which may span several quarters;
- competitive market conditions, including pricing actions by our competitors;
- seasonality, with fewer construction and upgrade projects typically occurring in winter months and otherwise being affected by inclement weather;
- our unpredictable sales cycles;
- new product introductions by our competitors or by us;
- changes in domestic and international regulatory environments;
- market acceptance of new or existing products;
- the cost and availability of components, subassemblies and modules;
- the mix of our customer base and sales channels;
- the mix of our products sold;
- our development of custom products and software;
- the level of international sales; and
- economic and financial conditions specific to the cable and satellite industries, and general economic conditions.

For example, the timing of deployment of our equipment can be subject to a number of other risks, including the availability of skilled engineering and technical personnel, the availability of other equipment such as digital set top boxes, and the need for local franchise and licensing approvals.

In addition, we often recognize a substantial portion of our revenues in the last month of the quarter. We establish our expenditure levels for product development and other operating expenses based on projected sales levels, and expenses are relatively fixed in the short term. Accordingly, variations in timing of sales can cause significant fluctuations in operating results. As a result of all these factors, our operating results in one or more future periods may fail to meet or exceed the expectations of securities analysts or investors. In that event, the trading price of our common stock would likely decline. In this regard, due to lower than expected sales in several quarters during 2000 and 2001, and during the third quarter of 2002 and the first quarter of 2003, we failed to meet our internal expectations, as well as the expectations of securities analysts and investors, and the price of our common stock declined, in some cases significantly.

[Table of Contents](#)

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

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

- a significant technical evaluation;
- a commitment of capital and other resources by cable, satellite, and other network operators;
- time required to engineer the deployment of new technologies or new broadband services;
- testing and acceptance of new technologies that affect key operations; and
- test marketing of new services with subscribers.

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

As a result of the merger with C-Cube, a significant portion of our revenue is derived from solution contracts that include a combination of product sales as well as design, installation and integration services. Revenue forecasts for solution contracts are based on the estimated timing of the design, installation and integration of projects. Because the solution contracts generally span several quarters and revenue recognition is based on progress under the contract, the timing of revenue is difficult to predict and could result in lower than expected revenue in any particular quarter.

We Depend On Our International Sales And Are Subject To The Risks Associated With International Operations, Which May Negatively Affect Our Operating Results.

Sales to customers outside of the United States in 2003, 2002 and 2001 represented 29%, 29% and 40%, of net sales, respectively, and we expect that international sales will continue to represent a meaningful portion of our net sales for the foreseeable future. Furthermore, a substantial portion of our contract manufacturing occurs overseas. Our international operations, the international operations of our contract manufacturer and our efforts to increase sales in international markets, are subject to a number of risks, including:

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

Certain of our international customers have accumulated significant levels of debt and have announced during the past three years, reorganizations and financial restructurings, including bankruptcy filings. Even if these restructurings are completed, we cannot assure you that these customers will be in a position to purchase new equipment at levels we have seen in the past.

[Table of Contents](#)

While our international sales and operating expenses have typically been denominated in U.S. dollars, fluctuations in currency exchange rates could cause our products to become relatively more expensive to customers in a particular country, leading to a reduction in sales or profitability in that country.

Following implementation of the Euro in January 2002, a higher portion of our European business is denominated in Euros, which may subject us to increased foreign currency risk. Gains and losses on the conversion to U.S. dollars of accounts receivable, accounts payable and other monetary assets and liabilities arising from international operations may contribute to fluctuations in operating results. Furthermore, payment cycles for international customers are typically longer than those for customers in the United States. Unpredictable sales cycles could cause us to fail to meet or exceed the expectations of security analysts and investors for any given period. In addition, foreign markets may not develop in the future.

If Demand For Our Products Increases More Quickly Than We Expect, We May Be Unable To Meet Our Customers' Requirements.

Our net sales increased sequentially in the second, third and fourth quarters of 2003. If demand for our products continues to increase, the difficulty of accurately forecasting our customers' requirements and meeting these requirements will increase. Forecasting to meet customers' needs is particularly difficult in connection with newer products. Our ability to meet customer demand depends significantly on the availability of components and other materials as well as the ability of our contract manufacturers to scale their production. From time to time, we assess our relationship with our contract manufacturers. Changes in these relationships, or reallocating manufacturing to new or existing contract manufacturers, could adversely affect our ability to meet our customers' requirements in a timely manner, if at all, and could create operating inefficiencies. Furthermore, we purchase several key components, subassemblies and modules used in the manufacture or integration of our products from sole or limited sources. Our ability to meet customer requirements depends in part on our ability to obtain a sufficient number of these materials in a timely fashion. Also, in recent years, in response to lower net sales and the prolonged economic recession, we significantly reduced our headcount and other expenses. As a result, we may be unable to respond to customer demand that increases more quickly than we expect. If we fail to meet customers' supply expectations, our net sales would be adversely affected and we may lose business.

Competition For Qualified Personnel, Particularly Management Personnel, Can Be Intense. In Order to Manage Our Growth, We Must Be Successful in Addressing Management Succession Issues and Attracting and Retaining Qualified Personnel.

Our future success will depend, to a significant extent, on the ability of our management to operate effectively, both individually and as a group. We must successfully manage transition and replacement issues that may result from the departure or retirement of members of our senior management. We are dependent on our ability to retain and motivate high caliber personnel, in addition to attracting new personnel. Competition for qualified management, technical and other personnel can be intense, and we may not be successful in attracting and retaining such personnel. Competitors and others have in the past and may in the future attempt to recruit our employees. While our employees are required to sign standard agreements concerning confidentiality and ownership of inventions, we generally do not have employment contracts or non-competition agreements with any of our personnel. The loss of the services of any of our key personnel, the inability to attract or retain qualified personnel in the future or delays in hiring required personnel, particularly senior management and engineers and other technical personnel, could negatively affect our business.

We Face Risks Associated With Having Important Facilities And Resources Located In Israel.

Harmonic maintains a facility in Caesarea in the State of Israel with a total of approximately 60 employees as of December 31, 2003, or approximately 11% of our workforce. The employees at this facility consist principally of research and development personnel involved in development of certain products for the CS division. In addition, we have pilot production capabilities at this facility consisting of procurement of subassemblies and modules from Israeli subcontractors and final assembly and test operations. Accordingly, we are directly influenced by the political, economic and military conditions affecting Israel, and any major hostilities involving Israel or the interruption or curtailment of trade

[Table of Contents](#)

between Israel and its trading partners could significantly harm our business. The September 2001 terrorist attacks, the ongoing U.S. war on terrorism and the escalation of terrorist attacks and hostilities within Israel have heightened these risks. We cannot assure you that the protraction or escalation of current tensions in the Middle East will not adversely affect our business and results of operations.

In addition, most of our employees in Israel are currently obligated to perform annual reserve duty in the Israel Defense Forces and several have been called for active military duty recently. We cannot predict the effect of these obligations on Harmonic in the future.

Pending Business Combinations And Other Financial And Regulatory Issues Among Our Customers Could Adversely Affect Our Business.

The telecommunications industry has been particularly impacted by the prolonged economic recession, adverse conditions in capital markets and financial difficulties in both the service and equipment sectors, including bankruptcies. Although large telecommunications service providers such as WorldCom (now MCI) and troubled data and voice-oriented start-ups have not been traditional customers of Harmonic, the cable, satellite and broadcast sectors have experienced significant financial problems. Many of our domestic and international customers have accumulated significant levels of debt and have announced reorganizations and financial restructurings during the past two years, including bankruptcy filings. In particular, Adelphia Communications, a major domestic cable operator, declared bankruptcy in June 2002. The stock prices of other domestic cable companies came under pressure following the Adelphia bankruptcy due to concerns about debt levels and capital expenditure requirements for new and expanded services, thereby making the raising of capital more difficult and expensive. New operators, such as RCN and WinFirst, also had difficulty in accessing capital markets. WinFirst subsequently filed for bankruptcy. In Europe, rapid consolidation of the cable industry through acquisition also led to significant levels of debt at the major MSOs, and companies such as NTL and UPC commenced bankruptcy proceedings. European digital broadcasters, such as ITV Digital, Kirsch and Quiero, have also filed for protection from creditors.

While the capital market concerns about the domestic cable industry have eased since the summer of 2002, market conditions remain difficult and capital spending plans are generally constrained. It is likely that further industry restructuring will take place via mergers or spin-offs, such as the completed Comcast/ AT&T Broadband transaction and the proposed spin-off of Time-Warner Cable from Time-Warner. Comcast, our largest customer, recently announced a bid for The Walt Disney Company, and we cannot predict the impact of this bid on our net sales to Comcast. Also, The News Corporation Ltd., in December 2003, acquired an indirect controlling interest in Hughes Electronics, the parent company of DIRECTV. This transaction followed regulatory opposition to the proposed acquisition of DIRECTV by EchoStar. We cannot currently predict the impact of The News Corporation Ltd. control of DIRECTV on our future sales. We believe that uncertainty during 2002 regarding the proposed DIRECTV and EchoStar merger adversely affected capital spending by both of these parties as well as other customers. In addition, further business combinations may occur in the satellite industry, and these further combinations could adversely affect our business. Regulatory issues, financial concerns and business combinations among our customers are likely to significantly affect the industry, its capital spending plans, and our levels of business for the foreseeable future.

We Must Be Able To Manage Expenses And Inventory Risks Associated With Meeting The Demand Of Our Customers.

If actual orders are materially lower than the indications we receive from our customers, our ability to manage inventory and expenses may be affected. If we enter into purchase commitments to acquire materials, or expend resources to manufacture products, and such products are not purchased by our customers, our business and operating results could suffer. In this regard, our gross margins and operating results for the fourth quarter of 2000 and in 2001 were adversely affected by provisions for excess and obsolete inventories of approximately \$49 million.

The Markets In Which We Operate Are Intensely Competitive And Many Of Our Competitors Are Larger And More Established.

The markets for cable television fiber optics systems and digital video broadcasting systems are extremely competitive and have been characterized by rapid technological change and declining average selling prices. Pressure on average selling prices has been particularly severe during the recent economic downturn as equipment suppliers compete aggressively for customers' reduced capital spending. Harmonic's competitors in the cable television fiber optics systems business include corporations such as C-Cor.net, Motorola, and Scientific-Atlanta. In the digital and video broadcasting systems business, we compete broadly with vertically integrated system suppliers including Motorola, Scientific-Atlanta, Tandberg Television and Thomson Multimedia, and in certain product lines with Cisco and a number of smaller companies.

Many of our competitors are substantially larger and have greater financial, technical, marketing and other resources than Harmonic. Many of these large organizations are in a better position to withstand any significant reduction in capital spending by customers in these markets. They often have broader product lines and market focus and may not be as susceptible to downturns in a particular market. In addition, many of our competitors have been in operation longer than we have and therefore have more long standing and established relationships with domestic and foreign customers. We may not be able to compete successfully in the future, which may harm our business.

If any of our competitors' products or technologies were to become the industry standard, our business could be seriously harmed. For example, U.S. cable operators have to date mostly purchased proprietary digital systems from Motorola and Scientific-Atlanta. While certain operators have made limited purchases of the "open" systems provided by Harmonic, we cannot assure you that our digital products will find broad market acceptance with U.S. cable operators. In addition, companies that have historically not had a large presence in the broadband communications equipment market have begun recently to expand their market share through mergers and acquisitions. The continued consolidation of our competitors could have a significant negative impact on us. Further, our competitors, particularly competitors of our digital and video broadcasting systems business, may bundle their products or incorporate functionality into existing products in a manner that discourages users from purchasing our products or which may require us to lower our selling prices resulting in lower gross margins.

Broadband Communications Markets Are Characterized By Rapid Technological Change.

Broadband communications markets are relatively immature, making it difficult to accurately predict the markets' future growth rates, sizes or technological directions. In view of the evolving nature of these markets, it is possible that cable television operators, telephone companies or other suppliers of broadband wireless and satellite services will decide to adopt alternative architectures or technologies that are incompatible with our current or future products. If we are unable to design, develop, manufacture and sell products that incorporate or are compatible with these new architectures or technologies, our business will suffer.

We Need To Develop And Introduce New And Enhanced Products In A Timely Manner To Remain Competitive.

Broadband communications markets are characterized by continuing technological advancement, changes in customer requirements and evolving industry standards. To compete successfully, we must design, develop, manufacture and sell new or enhanced products that provide increasingly higher levels of performance and reliability. However, we may not be able to successfully develop or introduce these products if our products:

- are not cost effective;
- are not brought to market in a timely manner;
- are not in accordance with evolving industry standards and architectures; or
- fail to achieve market acceptance, or are ahead of the market.

[Table of Contents](#)

Also, to successfully develop and market certain of our planned products for digital applications, we may be required to enter into technology development or licensing agreements with third parties. We cannot assure you that we will be able to enter into any necessary technology development or licensing agreement on terms acceptable to us, or at all. The failure to enter into technology development or licensing agreements when necessary could limit our ability to develop and market new products and, accordingly, could materially and adversely affect our business and operating results.

We Purchase Several Key Components, Subassemblies And Modules Used In The Manufacture Or Integration Of Our Products From Sole Or Limited Sources, And We Are Increasingly Dependent On Contract Manufacturers.

Many components, subassemblies and modules necessary for the manufacture or integration of our products are obtained from a sole supplier or a limited group of suppliers. Our reliance on sole or limited suppliers, particularly foreign suppliers, and our increased reliance on subcontractors since the merger with C-Cube involves several risks, including a potential inability to obtain an adequate supply of required components, subassemblies or modules and reduced control over pricing, quality and timely delivery of components, subassemblies or modules. In particular, certain optical components have in the past been in short supply and are available only from a small number of suppliers, including sole source suppliers. While we expend resources to qualify additional optical component sources, consolidation of suppliers in the industry and the small number of viable alternatives have limited the results of these efforts. We do not generally maintain long-term agreements with any of our suppliers. Managing our supplier and contractor relationships is particularly difficult during time periods in which we introduce new products and during time periods in which demand for our products is increasing, especially if demand increases more quickly than we expect. Furthermore, from time to time we assess our relationship with our contract manufacturers. In late 2003, we entered into a three-year agreement with Plexus Services Corp. as our primary contract manufacturer. The transition of our manufacturing requirements from certain current contract manufacturers to Plexus is in progress. We plan to complete the transition during the second quarter of 2004. Difficulties in managing relationships with current contract manufacturers, or problems encountered by Plexus or Harmonic in completing the transition, could impede our ability to meet our customers' requirements and adversely affect our operating results. An inability to obtain adequate deliveries or any other circumstance that would require us to seek alternative sources of supply could affect our ability to ship our products on a timely basis, which could damage relationships with current and prospective customers and harm our business. We attempt to limit this risk by maintaining safety stocks of certain components, subassemblies and modules. As a result of this investment in inventories, we have in the past and in the future may be subject to risk of excess and obsolete inventories, which could harm our business, operating results, financial position and liquidity. In this regard, our gross margins and operating results from the fourth quarter of 2000 through the third quarter of 2001 were adversely affected by excess and obsolete inventory charges of approximately \$49 million.

We May Need Additional Capital In The Future And May Not Be Able To Secure Adequate Funds On Terms Acceptable To Us.

We have generated substantial operating losses since we began operations in June 1988. The extent of our future losses and the timing of potential profitability are highly uncertain, and we may never achieve sustained profitable operations. We have been engaged in the design, manufacture and sale of a variety of broadband products since inception, which has required, and will continue to require, significant research and development expenditures. As of December 31, 2003 we had an accumulated deficit of \$1.9 billion. Although we were profitable in the fourth quarter of 2003, we may not sustain this profitability. These losses, among other things, have had and may have an adverse effect on our stockholders' equity and working capital.

We believe that the proceeds of the stock offering we completed in November 2003, with our existing liquidity sources, will satisfy our cash requirements for at least the next twelve months, including the final settlement and payment of C-Cube's pre-merger tax liabilities. However, we may need to raise additional funds if our expectations are incorrect, to fund our operations, to take advantage of unanticipated opportunities or to strengthen our financial position. The stock offering we completed in November 2003 related to a registration statement on Form S-3 declared effective by the SEC in April 2002. This registration statement will continue to allow Harmonic to issue various types of securities, including common stock, preferred stock, debt securities and warrants to purchase common stock from time to time, up to an aggregate of approximately \$73 million, subject to market conditions and our capital needs. Our ability to raise funds may

[Table of Contents](#)

be adversely affected by a number of factors relating to Harmonic, as well as factors beyond our control, including conditions in capital markets and the cable, telecom and satellite industries. There can be no assurance that such financing will be available on terms acceptable to us, if at all.

In addition, from time to time, we review potential acquisitions that would complement our existing product offerings, enhance our technical capabilities or expand our marketing and sales presence. Any future transaction of this nature could require potentially significant amounts of capital to finance the acquisition and related expenses as well as to integrate operations following a transaction, and could require us to issue our stock and dilute existing stockholders. If adequate funds are not available, or are not available on acceptable terms, we may not be able to take advantage of market opportunities, to develop new products or to otherwise respond to competitive pressures.

We may raise additional financing through public or private equity offerings, debt financings or additional corporate collaboration and licensing arrangements. To the extent we raise additional capital by issuing equity securities, our stockholders may experience dilution. To the extent that we raise additional funds through collaboration and licensing arrangements, it may be necessary to relinquish some rights to our technologies or products, or grant licenses on terms that are not favorable to us. If adequate funds are not available, we will not be able to continue developing our products.

We Need To Effectively Manage Our Operations And The Cyclical Nature Of Our Business.

The cyclical nature of our business has placed, and is expected to continue to place, a significant strain on our personnel, management and other resources. This strain has been exacerbated by the acquisition of DiviCom and the subsequent loss of numerous employees, including senior management. In addition, we reduced our work force by approximately 44% between December 31, 2000 and December 31, 2003 due to reduced industry spending and demand for our products. If demand for products increases significantly, we may need to increase our headcount. Our ability to manage our business effectively in the future, including any future growth, will require us to train, motivate and manage our employees successfully, to attract and integrate new employees into our overall operations, to retain key employees and to continue to improve our operational, financial and management systems.

We Are Incurring Additional Costs And Devoting More Management Resources To Comply With Increasing Regulation Of Corporate Governance And Disclosure.

We are spending an increased amount of management time and external resources to understand and comply with changing laws, regulations and standards relating to corporate governance and public disclosure, including the Sarbanes-Oxley Act of 2002, new SEC regulations and Nasdaq Stock Market rules. Devoting the necessary resources to comply with evolving corporate governance and public disclosure standards may result in increased general and administrative expenses and a diversion of management time and attention to compliance activities. Moreover, we may not be able to comply with these new rules and regulations on a timely basis.

Recent And Proposed Regulations Related To Equity Compensation Could Adversely Affect Earnings, Affect Our Ability To Raise Capital And Affect Our Ability To Attract And Retain Key Personnel.

Since our inception, we have used stock options as a fundamental component of our employee compensation packages. We believe that our stock option plans are an essential tool to link the long-term interests of stockholders and employees, especially executive management, and serve to motivate management to make decisions that will, in the long run, give the best returns to stockholders. The Financial Accounting Standards Board (FASB) has announced that it will propose changes to US GAAP that, if implemented, would require us to record a charge to earnings for employee stock option grants. This pending regulation would negatively impact our earnings and could affect our ability to raise capital on acceptable terms. In addition, new regulations implemented by The Nasdaq National Market requiring stockholder approval for all stock option plans could make it more difficult for us to grant options to employees in the future. To the extent that new regulations make it more difficult or expensive to grant options to employees, we may incur increased compensation costs, change our equity compensation strategy or find it difficult to attract, retain and motivate employees, each of which could materially and adversely affect our business.

[Table of Contents](#)

We Are Liable For C-Cube's Pre-Merger Tax Liabilities, Including Tax Liabilities Resulting From The Spin-Off Of Its Semiconductor Business.

Under the terms of the merger agreement with C-Cube, Harmonic is generally liable for C-Cube's pre-merger tax liabilities. Approximately \$20.8 million of pre-merger tax liabilities remain outstanding and are included in accrued liabilities. We are working with LSI Logic, which acquired C-Cube's spun-off semiconductor business in June 2001 and assumed its obligations, to develop an approach to settle these obligations, a process which has been underway since the merger in 2000. These liabilities represent estimates of C-Cube's pre-merger tax obligations to various tax authorities in 13 countries. We are currently in discussions with tax authorities in 2 of these countries, but none of these estimates has yet been finalized. Harmonic expects to pay at least \$3.2 million of these tax obligations during the second quarter of 2004, but is unable to predict when the remaining tax obligations will be paid, or in what amount. The full amount of the estimated obligation has been classified as a current liability. To the extent that these obligations are finally settled for less than the amounts provided, Harmonic is required, under the terms of the merger agreement, to refund the difference to LSI Logic. Conversely, if the settlements are more than the \$20.8 million pre-merger tax liability, LSI Logic is obligated to reimburse Harmonic.

The merger agreement stipulates that Harmonic will be indemnified by the spun-off semiconductor business if the cash reserves are not sufficient to satisfy all of C-Cube's tax liabilities for periods prior to the merger. If for any reason, the spun-off semiconductor business does not have sufficient cash to pay such taxes, or if there are additional taxes due with respect to the non-semiconductor business and Harmonic cannot be indemnified by LSI Logic, Harmonic generally will remain liable, and such liability could have a material adverse effect on our financial condition, results of operations and cash flows.

We May Be Subject To Risks Associated With Other Acquisitions.

We have made, continue to consider making and may make investments in complementary companies, products or technologies. If we enter into acquisition transactions, we could have difficulty assimilating or retaining the acquired companies' key personnel and operations or integrating the acquired technology or products into ours. We also may face challenges in achieving the strategic objectives, cost savings or other benefits from a proposed acquisition and difficulties in expanding our management information systems to accommodate the acquired business. These difficulties could disrupt our ongoing business, distract our management and employees and significantly increase our expenses. Moreover, our operating results may suffer because of acquisition-related expenses, amortization of intangible assets and impairment of acquired goodwill or intangible assets. Furthermore, we may have to incur debt or issue equity securities to pay for any future acquisitions, or to provide for additional working capital requirements, the issuance of which could be dilutive to our existing shareholders. If we are unable to successfully address any of these risks, our business, financial condition and operating results could be harmed.

Cessation Of The Development And Production Of Video Encoding Chips By C-Cube's Spun-off Semiconductor Business May Adversely Impact Us.

The DiviCom business and C-Cube semiconductor business collaborated on the production and development of two video encoding microelectronic chips prior to the merger. In connection with the merger, Harmonic and the spun-off semiconductor business entered into a contractual relationship under which Harmonic will have access to certain of the spun-off semiconductor business technologies and products which the DiviCom business previously depended for its product and service offerings. The spun-off semiconductor business is the sole supplier of these chips to Harmonic. Several of these products continue to be important to our business, and we have incorporated these chips into additional products that we have developed.

However, under the contractual relationships between Harmonic and the spun-off semiconductor business, which was acquired by LSI Logic in June 2001, the semiconductor business does not have a firm commitment to continue the development of video encoding microelectronic chips. As a result, the semiconductor business may choose not to continue future development of the chips for any reason. The semiconductor business may also encounter in the future technological difficulties in the production and development of the chips. If the spun-off semiconductor business is not

[Table of Contents](#)

able to or does not sustain its development and production efforts in this area our business, financial condition, results of operations and cash flow could be harmed. Also, this agreement expires in October 2004.

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

We currently hold 44 issued United States patents and 16 issued foreign patents, and have a number of patent applications pending. Although we attempt to protect our intellectual property rights through patents, trademarks, copyrights, licensing arrangements, maintaining certain technology as trade secrets and other measures, we cannot assure you that any patent, trademark, copyright or other intellectual property rights owned by us will not be invalidated, circumvented or challenged, that such intellectual property rights will provide competitive advantages to us or that any of our pending or future patent applications will be issued with the scope of the claims sought by us, if at all. We cannot assure you that others will not develop technologies that are similar or superior to our technology, duplicate our technology or design around the patents that we own. In addition, effective patent, copyright and trade secret protection may be unavailable or limited in certain foreign countries in which we do business or may do business in the future.

We believe that patents and patent applications are not currently significant to our business, and investors therefore should not rely on our patent portfolio to give us a competitive advantage over others in our industry. We believe that the future success of our business will depend on our ability to translate the technological expertise and innovation of our personnel into new and enhanced products. We generally enter into confidentiality or license agreements with our employees, consultants, vendors and customers as needed, and generally limit access to and distribution of our proprietary information. Nevertheless, we cannot assure you that the steps taken by us will prevent misappropriation of our technology. In addition, we have taken in the past, and may take in the future, legal action to enforce our patents and other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement or invalidity. Such litigation could result in substantial costs and diversion of resources and could negatively affect our business, operating results, financial position and cash flows.

In order to successfully develop and market certain of our planned products for digital applications, we may be required to enter into technology development or licensing agreements with third parties. Although many companies are often willing to enter into technology development or licensing agreements, we cannot assure you that such agreements will be negotiated on terms acceptable to us, or at all. The failure to enter into technology development or licensing agreements, when necessary, could limit our ability to develop and market new products and could cause our business to suffer.

We Or Our Customers May Face Intellectual Property Infringement Claims From Third Parties.

Harmonic's industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patent and other intellectual property rights. In particular, leading companies in the telecommunications industry have extensive patent portfolios. From time to time, third parties, including these leading companies, have asserted and may assert exclusive patent, copyright, trademark and other intellectual property rights against us or our customers. Indeed, a number of third parties, including leading companies, have asserted patent rights to technologies that are important to us.

On July 3, 2003, Stanford University and Litton Systems filed a complaint in U.S. District Court for the Central District of California alleging that optical fiber amplifiers incorporated into certain of Harmonic's products infringe U.S. Patent No. 4,859,016. This patent expired in September 2003. The complaint seeks injunctive relief, royalties and damages. Harmonic has not been served in the case. Harmonic is currently evaluating its position with respect to this patent and has engaged in discussions with the plaintiff regarding potential settlement of the matter. At this time, Harmonic is unable to determine whether Harmonic will be able to settle this matter on reasonable terms or at all, nor can Harmonic predict the impact of an adverse outcome of this litigation if Harmonic elects to defend against it. Consequently, Harmonic has made no provision in its financial statements for the outcome of a negotiated settlement or an unfavorable verdict in litigation. An unfavorable outcome of this matter could have a material adverse effect on Harmonic's business, operating results, financial position and cash flows.

[Table of Contents](#)

Our suppliers and customers may receive similar claims. We have agreed to indemnify some of our suppliers and customers for alleged patent infringement. The scope of this indemnity varies, but, in some instances, includes indemnification for damages and expenses (including reasonable attorney's fees). In this regard, since December 2000, we have been in communication with several of Harmonic's customers who have been contacted by one of these leading companies that believes certain of our products require a license under a number of their patents. We currently are reviewing the identified patents to examine whether we consider a license necessary. While it is our understanding that the third party is willing to grant our customers a non-exclusive license under the identified patents, there can be no assurance that the terms of any offered license would be acceptable to our customers or that failure to obtain a license or the costs associated with any license would not cause our operating results to be materially adversely affected.

We Are The Subject Of Securities Class Action Claims And Other Litigation Which, If Adversely Determined, Could Harm Our Business And Operating Results.

Between June 28 and August 25, 2000, several actions alleging violations of the federal securities laws by Harmonic and certain of its officers and directors (some of whom are no longer with Harmonic) were filed in or removed to the United States District Court for the Northern District of California. The actions subsequently were consolidated.

A consolidated complaint, filed on December 7, 2000, was brought on behalf of a purported class of persons who purchased Harmonic's publicly traded securities between January 19 and June 26, 2000. The complaint also alleged claims on behalf of a purported subclass of persons who purchased C-Cube securities between January 19 and May 3, 2000. In addition to Harmonic and certain of its officers and directors, the complaint also named C-Cube Microsystems Inc. and several of its officers and directors as defendants. The complaint alleged that, by making false or misleading statements regarding Harmonic's prospects and customers and its acquisition of C-Cube, certain defendants violated sections 10(b) and 20(a) of the Securities Exchange Act of 1934. The complaint also alleged that certain defendants violated section 14(a) of the Exchange Act and sections 11, 12(a)(2), and 15 of the Securities Act of 1933 by filing a false or misleading registration statement, prospectus, and joint proxy in connection with the C-Cube acquisition.

On July 3, 2001, the Court dismissed the consolidated complaint with leave to amend. An amended complaint alleging the same claims against the same defendants was filed on August 13, 2001. Defendants moved to dismiss the amended complaint on September 24, 2001. On November 13, 2002, the Court issued an opinion granting the motions to dismiss the amended complaint without leave to amend. Judgment for defendants was entered on December 2, 2002. On December 12, 2002, plaintiffs filed a motion to amend the judgment and for leave to file an amended complaint pursuant to Rules 59(e) and 15(a) of the Federal Rules of Civil Procedure. On June 6, 2003, the Court denied plaintiffs' motion to amend the judgment and for leave to file an amended complaint. Plaintiffs filed a notice of appeal on July 1, 2003. Plaintiffs filed their opening brief on December 3, 2003. Defendants filed their answering briefs on March 2, 2004. Plaintiffs' optional reply brief is due fourteen days from service of the answering briefs. No hearing has been scheduled yet.

A derivative action purporting to be on behalf of Harmonic was filed against its then-current directors in the Superior Court for the County of Santa Clara on September 5, 2000. Harmonic also was named as a nominal defendant. The complaint is based on allegations similar to those found in the securities class action and claims that the defendants breached their fiduciary duties by, among other things, causing Harmonic to violate federal securities laws. The derivative action was removed to the United States District Court for the Northern District of California on September 20, 2000. All deadlines in this action were stayed pending resolution of the motions to dismiss the securities class action. On July 29, 2003, the Court approved the parties' stipulation to dismiss this derivative action without prejudice and to toll the applicable limitations period. The limitations period is tolled until fourteen days after (1) defendants provide plaintiff with a copy of the mandate issued by the Ninth Court in the securities action or (2) either party provides written notice of termination of the tolling period, whichever is first.

A second derivative action purporting to be on behalf of Harmonic was filed in the Superior Court for the County of Santa Clara on May 15, 2003. It alleges facts similar to those previously alleged in the securities class action and the federal derivative action. The complaint names as defendants former and current Harmonic officers and directors, along with former officers and directors of C-Cube Microsystems, Inc., who were named in the securities class action. The complaint

[Table of Contents](#)

also names Harmonic as a nominal defendant. The complaint alleges claims for abuse of control, gross mismanagement, and waste of corporate assets against the Harmonic defendants, and claims for breach of fiduciary duty, unjust enrichment, and negligent misrepresentation against all defendants. On July 22, 2003, the Court approved the parties' stipulation to stay the case pending resolution of the appeal in the securities class action. Although the parties initially agreed in principle to a dismissal without prejudice on similar terms as in the federal derivative action, after further discussion, the parties decided that the stay currently in place suffices to protect their respective interests.

Based on its review of the complaints filed in the securities class action, Harmonic believes that it has meritorious defenses and intends to defend itself vigorously. There can be no assurance, however, that Harmonic will prevail. No estimate can be made of the possible range of loss associated with the resolution of this contingency and accordingly, Harmonic has not recorded a liability. An unfavorable outcome of this litigation could have a material adverse effect on Harmonic's business, operating results, financial position and cash flows.

On July 3, 2003, Stanford University and Litton Systems filed a complaint in U.S. District Court for the Central District of California alleging that optical fiber amplifiers incorporated into certain of Harmonic's products infringe U.S. Patent No. 4,859,016. This patent expired in September 2003. The complaint seeks injunctive relief, royalties and damages. Harmonic has not been served in the case. Harmonic is currently evaluating its position with respect to this patent and has engaged in discussions with the plaintiff regarding potential settlement of the matter. At this time, we are unable to determine whether we will be able to settle this litigation on reasonable terms or at all, nor can we predict the impact of an adverse outcome of this litigation if we elect to defend against it. No estimate can be made of the possible range of loss associated with the resolution of this contingency and accordingly, we have not recorded a liability associated with the outcome of a negotiated settlement or an unfavorable verdict in litigation. An unfavorable outcome of this matter could have a material adverse effect on Harmonic's business, operating results, financial position and cash flows.

The Terrorist Attacks Of 2001 And The Ongoing Threat Of Terrorism Have Created Great Uncertainty And May Continue To Harm Our Business.

Current conditions in the U.S. and global economies are uncertain. The terrorist attacks in 2001 created many economic and political uncertainties that have severely impacted the global economy. We experienced a further decline in demand for our products after the attacks. The long-term effects of the attacks, the situation in Iraq and the ongoing war on terrorism on our business and on the global economy remain unknown. Moreover, the potential for future terrorist attacks has created additional uncertainty and makes it difficult to estimate how quickly the U.S. and other economies will recover and our business will improve.

Our Stock Price May Be Volatile.

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

We Rely On A Continuous Power Supply To Conduct Our Operations, And Any Electrical And Natural Gas Crisis Could Disrupt Our Operations And Increase Our Expenses.

We rely on a continuous power supply for manufacturing and to conduct our business operations. Interruptions in electrical power supplies in California in the early part of 2001 could recur in the future. In addition, the cost of electricity and natural gas has risen significantly. Power outages could disrupt our manufacturing and business operations and those of many of our suppliers, and could cause us to fail to meet production schedules and commitments to customers and other third parties. Any disruption to our operations or those of our suppliers could result in damage to our current and prospective business relationships and could result in lost revenue and additional expenses, thereby harming our business and operating results.

[Table of Contents](#)

Some Anti-Takeover Provisions Contained In Our Certificate Of Incorporation, Bylaws And Stockholder Rights Plan, As Well As Provisions Of Delaware Law, Could Impair A Takeover Attempt.

Harmonic has provisions in its certificate of incorporation and bylaws, each of which could have the effect of rendering more difficult or discouraging an acquisition deemed undesirable by the Harmonic Board of Directors. These include provisions:

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

These provisions, alone or together, could delay hostile takeovers and changes in control or management of Harmonic.

In addition, Harmonic has adopted a stockholder rights plan. The rights are not intended to prevent a takeover of Harmonic, and we believe these rights will help Harmonic's negotiations with any potential acquirers. However, if the Board of Directors believes that a particular acquisition is undesirable, the rights may have the effect of rendering more difficult or discouraging that acquisition. The rights would cause substantial dilution to a person or group that attempts to acquire Harmonic on terms or in a manner not approved by the Harmonic Board of Directors, except pursuant to an offer conditioned upon redemption of the rights.

As a Delaware corporation, Harmonic also is subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation law, which prevents some stockholders holding more than 15% of our outstanding common stock from engaging in certain business combinations without approval of the holders of substantially all of our outstanding common stock.

Any provision of our certificate of incorporation or bylaws, our stockholder rights plan or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for Harmonic stockholders to receive a premium for their shares of Harmonic common stock, and could also affect the price that some investors are willing to pay for Harmonic common stock.

We Have Broad Discretion In How We Use The Net Proceeds Of Our Recent Offering, And We May Not Use These Proceeds In A Manner Desired By Our Stockholders.

Our management will have broad discretion with respect to the use of the net proceeds from our recent offering and investors will be relying on the judgment of our management regarding the application of these proceeds. Our management could spend most of the net proceeds from this offering in ways that our stockholders may not desire or that do not yield a favorable return. Investors will not have the opportunity, as part of your investment in our common stock, to influence the manner in which the net proceeds of this offering are used. We plan to use the net proceeds from the offering primarily for working capital and general corporate purposes and to satisfy existing liabilities. Our financial performance may differ from our current expectations or our business needs may change as our business and the industry we address evolve. As a result, the proceeds we received in this offering may be used in a manner significantly different from our current expectations.

Item 7A. *Quantitative and Qualitative Disclosures About Market Risk*

Market risk represents the risk of loss that may impact the operating results, financial position, or liquidity of Harmonic due to adverse changes in market prices and rates. Harmonic is exposed to market risk because of changes in interest rates and foreign currency exchange rates as measured against the U.S. Dollar and currencies of Harmonic's subsidiaries.

Foreign Currency Exchange Risk

Harmonic has a number of international subsidiaries each of whose sales are generally denominated in U.S. dollars. Sales denominated in foreign currencies were approximately 4% of total net sales in 2003. In addition, the Company has various international branch offices which provide sales support and systems integration services. While Harmonic does not anticipate that near-term changes in exchange rates will have a material impact on Harmonic's operating results, financial position and liquidity, Harmonic cannot assure you that a sudden and significant change in the value of local currencies would not harm Harmonic's operating results, financial position and liquidity.

Interest Rate Risk

Exposure to market risk for changes in interest rates relate primarily to Harmonic's investment portfolio of marketable debt securities of various issuers, types and maturities and to Harmonic's borrowings under its bank line of credit facility. Harmonic does not use derivative instruments in its investment portfolio, and its investment portfolio only includes highly liquid instruments with an original maturity of less than two years. These investments are classified as available for sale and are carried at estimated fair value, with material unrealized gains and losses reported in other comprehensive income. There is risk that losses could be incurred if Harmonic were to sell any of its securities prior to stated maturity. A 10% change in interest rates would not have a material impact on financial conditions, results of operations and cash flows.

Item 8. *Financial Statements and Supplementary Data*

(a) Index to Consolidated Financial Statements

| | <u>Page</u> |
|-------------------------------------------------------------------------------------------------------|-------------|
| Report of Independent Auditors | 47 |
| Consolidated Balance Sheets as of December 31, 2003 and 2002 | 48 |
| Consolidated Statements of Operations for the years ended December 31, 2003, 2002, and 2001 | 49 |
| Consolidated Statements of Stockholders' Equity for the years ended December 31, 2003, 2002, and 2001 | 50 |
| Consolidated Statements of Cash Flows for the years ended December 31, 2003, 2002, 2001 | 51 |
| Notes to Consolidated Financial Statements | 52 |

(b) Financial Statement Schedules: The following is filed as part of this Annual Report on Form 10-K. See Item 15(a)(2):

Financial Statement Schedule II: Valuation and Qualifying Accounts and Reserves.

All other financial statement schedules have been omitted because the information is not required to be set forth herein, is not applicable or is included in the financial statements or notes thereto.

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

[Table of Contents](#)

Quarterly Data (Unaudited)

| | 2003 | | | | 2002 | | | |
|---------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 4th | 3rd | 2nd | 1st | 4th | 3rd | 2nd | 1st |
| (In thousands, except per share data) | | | | | | | | |
| Quarterly Data: | | | | | | | | |
| Net sales | \$ 56,329 | \$ 47,253 | \$ 41,653 | \$ 37,041 | \$ 39,272 | \$ 37,019 | \$ 56,309 | \$ 54,032 |
| Gross profit | 22,444 | 14,660 | 12,752 | 10,747 | 9,503 | 9,928 | 19,235 | 15,763 |
| Income (loss) from operations(1) | 838 | (7,611) | (12,020) | (11,752) | (13,994) | (38,436) | (11,414) | (13,505) |
| Net income (loss)(1) | 1,370 | (7,454) | (11,682) | (11,667) | (13,752) | (38,030) | (11,124) | (14,012) |
| Basic net income (loss) per share | 0.02 | (0.12) | (0.19) | (0.19) | (0.23) | (0.63) | (0.19) | (0.24) |
| Diluted net income (loss) per share | 0.02 | (0.12) | (0.19) | (0.19) | (0.23) | (0.63) | (0.19) | (0.24) |

- (1) The 2003 gross profit, loss from operations and net loss include credits to cost of sales of \$1.1 million, \$1.1 million, \$1.1 million, and \$1.4 million in the first, second, third and fourth quarters, respectively, for products sold during the year which had been written down in prior years. Operating expenses included credits of \$2.2 million in the fourth quarter from the sale of our bankruptcy claims in Adelphia Communications resulting in the reversal of previously recorded bad debt provisions and a litigation settlement charge of \$2.7 million in the fourth quarter.

The 2002 gross profit, loss from operations and net loss include credits to cost of sales of \$2.9 million, \$2.1 million, and \$1.9 million in the second, third and fourth quarters, respectively, for product sold during the periods which had been written down in prior years. Also included are charges of \$2.9 million, \$23.3 million and \$0.7 million in the second, third and fourth quarters, respectively, for probable losses on receivables and deferred cost of sales from Adelphia Communications, excess facilities, severance and other costs. See Note 4 of Notes to Consolidated Financial Statements.

REPORT OF INDEPENDENT AUDITORS

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

In our opinion, the consolidated financial statements listed in the index appearing under Item 8(a) on page 46 present fairly, in all material respects, the financial position of Harmonic Inc. and its subsidiaries at December 31, 2003 and 2002, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2003 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 8(a) on page 46 presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States of America, 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 our opinion.

/s/ PRICEWATERHOUSECOOPERS LLP

PRICEWATERHOUSECOOPERS LLP

San Jose, California

March 5, 2004

HARMONIC INC.
CONSOLIDATED BALANCE SHEETS

| | December 31, | |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------|
| | 2003 | 2002 |
| | (In thousands, except par value amounts) | |
| ASSETS | | |
| Current assets: | | |
| Cash and cash equivalents | \$ 41,877 | \$ 21,542 |
| Short-term investments | 70,720 | 27,616 |
| Accounts receivable, net | 38,528 | 24,484 |
| Inventories | 22,425 | 25,904 |
| Prepaid expenses and other current assets | 6,196 | 6,390 |
| | <hr/> | |
| Total current assets | 179,746 | 105,936 |
| Property and equipment, net | 23,458 | 32,456 |
| Intangibles and other assets | 21,522 | 35,362 |
| | <hr/> | |
| Total assets | \$ 224,726 | \$ 173,754 |
| | <hr/> | |
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| Current liabilities: | | |
| Current portion of long-term debt | \$ 1,027 | \$ 1,862 |
| Accounts payable | 14,863 | 7,258 |
| Income taxes payable | 6,935 | 6,900 |
| Deferred revenue | 11,712 | 8,969 |
| Accrued liabilities | 49,820 | 49,701 |
| | <hr/> | |
| Total current liabilities | 84,357 | 74,690 |
| Long-term debt, less current portion | 629 | 710 |
| Accrued excess facilities costs, long-term | 28,627 | 34,754 |
| Other non-current liabilities | 4,952 | 1,417 |
| | <hr/> | |
| Total liabilities | 118,565 | 111,571 |
| | <hr/> | |
| Commitments and contingencies (Notes 14, 15 and 16) | | |
| Stockholders' equity: | | |
| Preferred stock, \$0.001 par value, 5,000 shares authorized; no shares issued or outstanding | — | — |
| Common stock, \$0.001 par value, 150,000 shares authorized; 71,240 and 60,064 shares issued and outstanding | 71 | 60 |
| Capital in excess of par value | 2,036,522 | 1,963,234 |
| Accumulated deficit | (1,930,558) | (1,901,125) |
| Accumulated other comprehensive income | 126 | 14 |
| | <hr/> | |
| Total stockholders' equity | 106,161 | 62,183 |
| | <hr/> | |
| Total liabilities and stockholders' equity | \$ 224,726 | \$ 173,754 |
| | <hr/> | |

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

HARMONIC INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

| | Year Ended December 31, | | |
|-------------------------------------------|---------------------------------------|------------|-------------|
| | 2003 | 2002 | 2001 |
| | (In thousands, except per share data) | | |
| Net sales | \$182,276 | \$186,632 | \$ 203,810 |
| Cost of sales | 121,673 | 132,203 | 202,255 |
| Gross profit | 60,603 | 54,429 | 1,555 |
| Operating expenses: | | | |
| Research and development | 35,107 | 40,829 | 51,319 |
| Selling, general and administrative | 48,309 | 81,427 | 106,340 |
| Amortization of intangibles | 7,732 | 9,522 | 12,683 |
| Total operating expenses | 91,148 | 131,778 | 170,342 |
| Loss from operations | (30,545) | (77,349) | (168,787) |
| Interest and other income, net | 1,412 | 931 | 1,574 |
| Loss before income taxes | (29,133) | (76,418) | (167,213) |
| Provision for (benefit from) income taxes | 300 | 500 | (806) |
| Net loss | \$(29,433) | \$(76,918) | \$(166,407) |
| Net loss per share: | | | |
| Basic and Diluted | \$ (0.47) | \$ (1.29) | \$ (2.84) |
| Weighted average shares: | | | |
| Basic and Diluted | 62,288 | 59,779 | 58,540 |

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

HARMONIC INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(IN THOUSANDS)

| | Common Stock | | Capital in Excess of Par Value | Accumulated Deficit | Accumulated Other Comprehensive Income | Stockholders' Equity | Comprehensive Income (Loss) |
|--------------------------------------------------------------------------|--------------|--------|-----------------------------------|------------------------|-------------------------------------------------|-------------------------|--------------------------------|
| | Shares | Amount | | | | | |
| Balance at December 31, 2000 | 57,891 | \$ 58 | \$ 1,952,784 | \$ (1,657,800) | \$ 660 | \$ 295,702 | |
| Net loss | — | — | — | (166,407) | — | (166,407) | \$ (166,407) |
| Unrealized loss on investments | — | — | — | — | (164) | (164) | (164) |
| Currency translation | — | — | — | — | (337) | (337) | (337) |
| Comprehensive loss | | | | | | | \$ (166,908) |
| Issuance of Common Stock under option and purchase plans | 1,172 | 1 | 6,259 | — | — | 6,260 | |
| Balance at December 31, 2001 | 59,063 | 59 | 1,959,043 | (1,824,207) | 159 | 135,054 | |
| Net loss | — | — | — | (76,918) | — | (76,918) | \$ (76,918) |
| Currency translation | — | — | — | — | (145) | (145) | (145) |
| Comprehensive loss | | | | | | | \$ (77,063) |
| Stock option charge | — | — | 422 | — | — | 422 | |
| Issuance of Common Stock under option and purchase plans | 1,001 | 1 | 3,769 | — | — | 3,770 | |
| Balance at December 31, 2002 | 60,064 | 60 | 1,963,234 | (1,901,125) | 14 | 62,183 | |
| Net loss | — | — | — | (29,433) | — | (29,433) | \$ (29,433) |
| Unrealized gain on investments | — | — | — | — | 61 | 61 | 61 |
| Currency translation | — | — | — | — | 51 | 51 | 51 |
| Comprehensive income | | | | | | | \$ (29,321) |
| Stock option charge | — | — | 49 | — | — | 49 | |
| Issuance of Common Stock under option and purchase plans and other | 826 | 1 | 1,822 | — | — | 1,823 | |
| Issuance of Common Stock in public offering, net | 10,350 | 10 | 71,417 | — | — | 71,427 | |
| Balance at December 31, 2003 | 71,240 | \$ 71 | \$ 2,036,522 | \$ (1,930,558) | \$ 126 | \$ 106,161 | |

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

HARMONIC INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

| | Year Ended December 31, | | |
|-----------------------------------------------------------------------------|-------------------------|------------------|------------------|
| | 2003 | 2002 | 2001 |
| | (In thousands) | | |
| Cash flows from operating activities: | | | |
| Net loss | \$(29,433) | \$(76,918) | \$(166,407) |
| Adjustments to reconcile net loss to net cash used in operating activities: | | | |
| Amortization of intangibles | 13,894 | 18,648 | 20,741 |
| Depreciation and amortization | 12,274 | 15,735 | 18,169 |
| Stock option charge | 49 | 422 | — |
| Provision for (benefit from) excess and obsolete inventories | (4,672) | (6,932) | 39,190 |
| Impairment and loss on disposal of fixed assets | 88 | 856 | 12,523 |
| Deferred income taxes | — | 156 | (2,806) |
| Changes in assets and liabilities: | | | |
| Accounts receivable | (14,051) | 8,035 | 35,228 |
| Inventories | 8,188 | 11,907 | 10,038 |
| Prepaid expenses and other assets | 98 | 4,840 | 2,107 |
| Accounts payable | 7,605 | (3,038) | (22,487) |
| Deferred revenue | 2,743 | 2,390 | (8,454) |
| Income taxes payable | — | 4,126 | 1,763 |
| Accrued and other liabilities | 4,585 | (4,383) | 13,785 |
| Accrued excess facilities costs | (6,927) | 18,752 | 21,842 |
| Net cash used in operating activities | (5,559) | (5,404) | (24,768) |
| Cash flows provided by (used in) investing activities: | | | |
| Purchases of investments | (67,914) | (27,874) | (58,490) |
| Proceeds from sales of investments | 24,909 | 18,498 | 126,150 |
| Acquisition of property and equipment | (3,364) | (3,292) | (29,080) |
| Net cash provided by (used in) investing activities | (46,369) | (12,668) | 38,580 |
| Cash flows from financing activities: | | | |
| Proceeds from issuance of common stock, net | 73,251 | 3,770 | 6,260 |
| Borrowings under bank line and term loan | 1,001 | 1,274 | 3,203 |
| Repayments under bank line and term loan | (1,917) | (1,448) | (457) |
| Net cash provided by financing activities | 72,335 | 3,596 | 9,006 |
| Effect of exchange rate changes on cash and cash equivalents | (72) | 13 | (318) |
| Net increase (decrease) in cash and cash equivalents | 20,335 | (14,463) | 22,500 |
| Cash and cash equivalents at beginning of period | 21,542 | 36,005 | 13,505 |
| Cash and cash equivalents at end of period | \$ 41,877 | \$ 21,542 | \$ 36,005 |
| Supplemental disclosure of cash flow information: | | | |
| Income tax payments (refunds), net | \$ 211 | \$ (3,759) | \$ (25,623) |
| Interest paid during the period | \$ 154 | \$ 307 | \$ 125 |

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

HARMONIC INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1: Organization, Basis of Presentation and Summary of Significant Accounting Policies

Harmonic designs, manufactures and sells a variety of broadband solutions that allow communications service providers around the world to deliver video, voice and data to their subscribers. Harmonic's technically advanced fiber optic, digital video and data delivery systems enable network operators to provide a range of interactive and advanced digital services that include digital video, high-speed Internet access, telephony, high definition television (HDTV), video and audio streaming, and video-on-demand (VOD).

Historically, almost all of our sales were derived directly or indirectly from sales of fiber optic transmission systems to cable television operators. With the introduction of our digital headend products beginning in 1997, we broadened our product offering to enable delivery of digital video, voice and data over satellite and wireless networks and cable systems.

In order to further expand our digital systems capability, Harmonic acquired C-Cube Microsystems Inc. in May 2000, pursuant to the terms of a merger agreement dated October 27, 1999. Under the terms of the merger agreement, C-Cube spun off its semiconductor business as a separate publicly traded company, which was acquired by LSI Logic in June 2001. C-Cube then merged into Harmonic and Harmonic therefore acquired C-Cube's DiviCom business, which provides encoding products and systems for digital television. The merger was structured as a tax-free exchange of stock and accounted for under the purchase method of accounting. The purchase price, including merger-related costs, was approximately \$1.8 billion. As of December 31, 2000, Harmonic recorded an impairment charge of \$1.4 billion, eliminating goodwill and reducing identified intangibles to \$79.3 million. The merged company has been organized into two operating divisions, Broadband Access Networks, or BAN, for fiber optic systems and Convergent Systems, or CS, for digital headend systems.

Basis of Presentation. The consolidated financial statements of Harmonic include the financial statements of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated. Harmonic's fiscal quarters end on the Friday nearest the calendar quarter end, except for the fourth quarter which ends on December 31.

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

Cash and Cash Equivalents. Cash equivalents are comprised of highly liquid investment-grade investments with original maturities of three months or less at the date of purchase. Cash equivalents are stated at amounts that approximate fair value, based on quoted market prices.

Investments. Harmonic's short-term investments are stated at fair value, which approximate the cost of investments and are principally comprised of corporate debt securities. The Company classifies its investments as available for sale in accordance with SFAS No. 115, "Accounting for Certain Investments in Debt and Equity Securities," and states its investments at estimated fair value, with unrealized gains and losses reported in other comprehensive income. The specific identification method is used to determine the cost of securities disposed of, with realized gains and losses reflected in other income and expense. Investments are anticipated to be used for current operations and are, therefore, classified as current assets, even though maturities may extend beyond one year.

Fair Value of Financial Instruments. The carrying value of Harmonic's financial instruments, including cash, cash equivalents, short-term investments, accounts receivable, accounts payable, accrued liabilities and long-term debt approximate fair value due to their short maturities.

[Table of Contents](#)

Concentrations of Credit Risk. Financial instruments which subject Harmonic to concentrations of credit risk consist primarily of cash, cash equivalents, short-term investments and accounts receivable. Cash, cash equivalents and short-term investments are invested in short-term, highly liquid investment-grade obligations of commercial or governmental issuers, in accordance with Harmonic's investment policy. The investment policy limits the amount of credit exposure to any one financial institution, commercial or governmental issuer. Harmonic's accounts receivable are derived from sales to cable, satellite, and other network operators and distributors. Harmonic generally does not require collateral and performs ongoing credit evaluations of its customers and provides for expected losses. Harmonic maintains an allowance for doubtful accounts based upon the expected collectibility of its accounts receivable. The expectation of collectibility is based on its review of credit profiles of customers' contractual terms and conditions, current economic trends and historical payment experience. At December 31, 2003, receivables from two customers represented 21% and 14% of total receivables. At December 31, 2002, receivables from three customers represented 15%, 11%, and 11% of total receivables.

Revenue Recognition. Harmonic's principal sources of revenue are from product sales, solution sales, services and maintenance contracts. Harmonic recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been provided, the sale price is fixed or determinable, collectibility is reasonably assured, and risk of loss and title have transferred to the customer.

Revenue from product sales, excluding the revenue generated from service-related solutions, which are discussed below, is generally recognized upon shipment, or once all applicable criteria have been met. Allowances are provided for estimated returns and discounts. Such allowances are adjusted periodically to reflect actual and anticipated experience.

Revenue on solution sales, which principally consist of and include the design, manufacture, test, integration and installation of equipment to the specifications of Harmonic's customers, or acquired from third parties to be integrated with Harmonic's products, is generally recognized using the percentage of completion method. Under the percentage of completion method, revenue recognized reflects the portion of the anticipated contract revenue that has been earned, equal to the ratio of labor costs expended to date to anticipated final labor costs, based on current estimates of labor costs to complete the project. If the estimated costs to complete a project exceed the total contract amount, indicating a loss, the entire anticipated loss is recognized. Harmonic records revenue that is earned and recognized in excess of amounts invoiced on fixed price contracts as accounts receivables-unbilled.

Revenue from services, which is primarily from maintenance agreements, is generally recognized ratably as the services are performed or based on contractual terms. The costs associated with services are recognized as incurred. Maintenance services are recognized ratably over the maintenance term, which is typically one year. The costs associated with these maintenance services are recognized as incurred. The unrecognized revenue portion of maintenance agreements billed is recorded as deferred revenue.

Deferred revenue includes billings in excess of revenue recognized, net of deferred cost of sales, and invoiced amounts remain deferred until applicable revenue recognition criteria are met.

Certain agreements also include multiple deliverables or elements for products, software and/or services. Harmonic recognizes revenue from these agreements based on the relative fair value of the products and services as they are delivered. The determination of the fair value of the elements is based on a number of factors, including the amount charged to other customers for products or services, price lists, or other relevant information. If an undelivered element is essential to the functionality of the delivered element or required under the terms of the agreement to be delivered concurrently, we defer the revenue on the delivered element until that undelivered element is delivered. In the absence of fair value for an undelivered element, the arrangement is accounted for as a single unit of accounting, resulting in a deferral of revenue recognition for the delivered elements until the undelivered elements are fulfilled.

For certain products where software is more than an incidental, but less than essential component of the hardware, or where software has been identified as a separate element included in a multiple element arrangement, we recognize software license revenue in accordance with Statement of Position No. 97-2, "Software Revenue Recognition" ("SOP 97-2"), as amended by Statement of Position No. 98-9, "Software Revenue Recognition with Respect to Certain

[Table of Contents](#)

Transactions" ("SOP 98-9"). SOP 98-9 requires recognition of revenue using the "residual method" when (1) there is vendor specific objective evidence of the fair values of all undelivered elements in a multiple element arrangement that is not accounted for using long-term contract accounting; (2) vendor specific objective evidence of the fair value does not exist for one or more of the delivered elements in the arrangement; and (3) all revenue recognition criteria of SOP 97-2, other than the requirement for vendor specific objective evidence of the fair value of each delivered element of the arrangement are satisfied.

Shipping and Handling Costs. Shipping and handling costs incurred for inventory purchases and product shipments are recorded in "Cost of sales" in the Consolidated Statement of Operations.

Inventories. Inventories are stated at the lower of cost, using the weighted average method, or market. Harmonic establishes provisions for excess and obsolete inventories after evaluation of historical sales and future demand and market conditions, expected product lifecycles and current inventory levels to reduce such inventories to their estimated net realizable value. Such provisions are charged to cost of sales.

Capitalized Software Development Costs. Costs related to research and development are generally charged to expense as incurred. Capitalization of material software development costs begins when a product's technological feasibility has been established in accordance with the provisions of Statement of Financial Accounting Standards ("SFAS") No. 86, "Accounting for the Costs of Computer Software to be Sold, Leased, or Otherwise Marketed." To date, the time period between achieving technological feasibility, which the Company has defined as the establishment of a working model, which typically occurs when beta testing commences, and the general availability of such software, has been short, and as such, software development costs qualifying for capitalization have been insignificant.

Property and Equipment. Property and equipment are recorded at cost. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the assets. Estimated useful lives are 5 years for furniture and fixtures, and up to 4 years for machinery and equipment. Depreciation and amortization for leasehold improvements are computed using the shorter of the remaining useful lives of the assets up to 10 years or the lease term of the respective assets. Depreciation and amortization expense related to equipment and improvements for the years ended December 31, 2003, 2002 and 2001 were \$12.3 million, \$15.7 million and \$18.2 million, respectively.

Goodwill and Intangible Assets. Intangible assets represent purchased intangible assets and the excess of acquisition cost over the fair value of tangible and identified intangible net assets of businesses acquired, or goodwill. Purchased intangible assets include customer base, developed technology, trademark and tradename, and supply agreements. On January 1, 2002, Harmonic adopted SFAS No. 142, "Goodwill and Other Intangible Assets," and in accordance with this statement, the Company reclassified assembled workforce, net of related deferred tax liabilities, to goodwill, ceased amortizing goodwill, and performed impairment tests of goodwill and intangible assets. See Note 3, "Goodwill and Identified Intangibles".

Impairment of Long-Lived Assets. Long-lived assets, such as other intangibles and property and equipment, are evaluated for recoverability when indicators of impairment are present. On January 1, 2002, the Company adopted SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets", which addresses financial accounting and reporting for the impairment or disposal of long-lived assets. The Company evaluates the recoverability of other intangible assets and long-lived assets on the basis of undiscounted cash flows from each asset group. Under SFAS No. 144, if impairment is indicated, provisions for impairment are determined based on the fair value, using discounted cash flows. No impairment losses were incurred in the periods presented.

Restructuring Costs and Accruals for Excess Facilities. For restructuring activities initiated prior to December 31, 2002 Harmonic recorded restructuring costs when the Company committed to an exit plan and significant changes to the exit plan were not likely. Harmonic determines the excess facilities accrual based on estimates of expected sublease rental income for each excess facility. For restructuring activities initiated after December 31, 2002, the Company adopted SFAS No. 146, "Accounting for Costs Associated with Exit or Disposal Activities," which requires that a liability for costs associated with an exit or disposal activity be recognized and measured initially at fair value only when the liability is

[Table of Contents](#)

incurred. The adoption of SFAS No. 146 did not have a material impact on the Company's financial position, results of operations, or cash flows.

Accrued warranties. The Company accrues for estimated warranty at the time of product shipment and records such accrued liabilities as part of "Cost of sales". Management periodically reviews the estimated fair value of its warranty liability and adjusts based on the terms of warranties provided to customers, historical and anticipated warranty claims experience, and estimates of the timing and cost of specified warranty claims.

Currency Translation. The functional currency of the Company's Israeli operations is the U.S. dollar. All other foreign subsidiaries use the respective local currency as the functional currency. When the local currency is the functional currency, gains and losses from translation of these foreign currency financial statements into U.S. dollars are recorded as a separate component of other comprehensive income (loss) in stockholders' equity. For subsidiaries where the functional currency is the U.S. dollar, gains and losses resulting from re-measuring foreign currency denominated balances into U.S. dollars are included in interest and other income, net.

Income Taxes. Deferred income tax assets and liabilities are computed annually for differences between the financial statement and tax bases of assets and liabilities that will result in taxable or deductible amounts in the future based on enacted tax laws and rates applicable to the periods in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized.

Advertising Expenses. Harmonic expenses the cost of advertising as incurred. During 2003, 2002 and 2001, advertising expenses were not material to results of operations.

Stock Based Compensation. Harmonic accounts for employee stock option plans in accordance with Accounting Principles Board No. 25 ("APB 25"), "Accounting for Stock Issued to Employees", and has adopted the disclosure requirements under SFAS No. 148, "Accounting for Stock-Based Compensation — Transition and Disclosure", which was issued in December 2002. If charges for Harmonic's stock plans had been determined based on the fair value method at the grant dates, as prescribed in SFAS No. 123, "Accounting for Stock-Based Compensation", the Company's net loss and net loss per share would have been as follows:

| | Year Ended December 31, (In thousands, except per share data) | | |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|------------|-------------|
| | 2003 | 2002 | 2001 |
| Net loss as reported | \$(29,433) | \$(76,918) | \$(166,407) |
| Deduct: Stock expense included in net loss, net of related tax effects | — | 372 | — |
| Add: Total stock expense determined under fair value based method for all awards, net of related tax effects | (10,539) | (13,216) | (21,890) |
| Pro forma net loss | \$(39,972) | \$(89,762) | \$(188,297) |
| Basic and Diluted net loss per share: | | | |
| As reported | \$ (0.47) | \$ (1.29) | \$ (2.84) |
| Pro forma | \$ (0.64) | \$ (1.50) | \$ (3.22) |

[Table of Contents](#)

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

| | Employee Stock Options | | | Employee Stock Purchase Plan | | |
|-------------------------|------------------------|------|------|------------------------------|------|------|
| | 2003 | 2002 | 2001 | 2003 | 2002 | 2001 |
| Dividend yield | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Volatility | 126% | 122% | 112% | 131% | 139% | 142% |
| Risk-free interest rate | 2.3% | 3.2% | 4.2% | 1.7% | 3.4% | 3.9% |
| Expected life (years) | 3.6 | 3.4 | 3.3 | 1.3 | 1.4 | 1.2 |

Comprehensive Income (Loss). Comprehensive income (loss) includes net loss and other comprehensive income (loss). Other comprehensive income (loss) includes cumulative translation adjustments and unrealized gains and losses on available-for-sale securities. Harmonic's comprehensive income (loss) has been presented in the Consolidated Statement of Stockholders' Equity.

Accounting for Derivatives and Hedging Activities. Harmonic accounts for derivative financial instruments and hedging contracts in accordance with SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities" and SFAS No. 149, "Amendment of Statement 133 on Derivative Instruments and Hedging activities" which require that all derivatives be recognized at fair value in the statement of financial position, and that the corresponding gains or losses be reported either in the statement of operations or as a component of comprehensive income, depending on the type of hedging relationship that exists.

Periodically, Harmonic enters into foreign currency forward exchange contracts ("forward contracts") to manage exposure related to accounts receivable denominated in foreign currencies. The Company does not enter into derivative financial instruments for trading purposes. Harmonic had no forward contracts outstanding as of December 31, 2003 and 2002.

Reclassification. Certain amounts in prior years' financial statements and related notes have been reclassified to conform to the 2003 presentation. These reclassifications have no material impact on previously reported net loss or cash flows.

Note 2: Recent Accounting Pronouncements

In November 2002, the Emerging Issues Task Force ("EITF") reached a consensus on Issue No. 00-21, "Revenue Arrangements with Multiple Deliverables." EITF Issue No. 00-21 provides guidance on how to account for arrangements that involve the delivery or performance of multiple products, services and/or rights to use assets. Harmonic adopted EITF Issue No. 00-21 effective June 28, 2003, and the adoption did not have a significant effect on the Company's financial position, results of operations, or cash flows.

In January 2003, the Financial Accounting Standards Board ("FASB") issued FASB Interpretation No. 46 ("FIN 46"), "Consolidation of Variable Interest Entities", which addresses accounting for the assets, liabilities and activities of another entity. Prior to the issuance of FIN 46, a company generally included another entity in its consolidated financial statements only if it controlled the entity through voting interests. FIN 46 now requires a variable interest entity, as defined in FIN 46, to be consolidated by a company if that company is subject to a majority of the risk of loss from the variable interest entity activities or is entitled to receive a majority of the entity's residual returns or both. FIN 46 also requires disclosures about variable interest entities that the company is not required to consolidate but in which it has a significant variable interest. The consolidation requirements of FIN 46 apply immediately to variable interest entities created after January 31, 2003 and to older entities in the first fiscal year or interim period beginning after June 15, 2003, subsequently delayed to December 31, 2003. Certain of the disclosure requirements apply to all financial statements issued after January 31, 2003, regardless of when the variable interest entity was established. The adoption of FIN 46 had no effect on the Company's financial position, results of operations, or cash flows.

In April 2003, the FASB issued SFAS No. 149, "Amendment of Statement 133 on Derivative Instruments and Hedging activities." SFAS No. 149 amends and clarifies the accounting for derivative instruments, including certain derivative

[Table of Contents](#)

instruments embedded in other contracts, and for hedging activities under SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." Harmonic adopted SFAS No. 149 effective June 28, 2003, and the adoption had no effect on the Company's financial position, results of operations, or cash flows.

In May 2003, the FASB issued SFAS No. 150, "Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity." SFAS No. 150 requires that certain financial instruments, which under previous guidance were accounted for as equity, must now be accounted for as liabilities. The financial instruments affected include mandatorily redeemable stock, certain financial instruments that require or may require the issuer to buy back some of its shares in exchange for cash or other assets and certain obligations that can be settled with shares of stock. Harmonic adopted SFAS No. 150 effective June 28, 2003, and the adoption had no effect on the Company's financial position, results of operations, or cash flows.

In August 2003, the EITF reached a consensus on Issue No. 03-05, "Applicability of SOP 97-2 to Non-Software Deliverables in an Arrangement Containing More-Than-Incidental Software." EITF Issue No. 03-05 provides guidance on accounting for arrangements that include software and non-software deliverables. Software-related elements include software products and services and non-software deliverables for which the related software is essential to its functionality. The Company adopted the provisions of EITF Issue No. 03-05 for revenue arrangements entered into after August 13, 2003. The adoption did not have a significant impact on the Company's financial position, results of operations, or cash flows.

In December 2003, the Securities and Exchange Commission ("SEC") issued Staff Accounting Bulletin No. 104 ("SAB 104"). SAB 104 revises or rescinds portions of the interpretative guidance included in Topic 13 of the codification of staff accounting bulletins. The primary purpose of SAB 104 was to remove multiple element guidance in SAB 101 that is superseded by and potentially in conflict with EITF Issue No. 00-21. The Company adopted the provisions of SAB No. 104 effective December 17, 2003. The adoption did not have a significant impact on the Company's financial position, results of operations, or cash flows.

Note 3: Goodwill and Identified Intangibles

As of January 1, 2002, Harmonic adopted SFAS No. 142, "Goodwill and Other Intangible Assets", which requires, among other things, that goodwill and intangible assets with indefinite useful lives no longer be amortized. In addition, the standard includes provisions for the reclassification of certain existing recognized intangibles as goodwill, reassessment of the useful lives of existing recognized intangibles, and the testing for impairment of existing goodwill and other intangibles at least annually. Upon adoption, the Company reassessed the classification of its goodwill and intangible assets, and reclassified \$0.2 million of assembled workforce, net of accumulated amortization and tax effects, to goodwill and ceased the amortization of goodwill.

For purposes of applying SFAS No. 142, management believes the operating divisions, BAN and CS, represent the Company's reporting units. CS is the only reporting unit with goodwill and intangible assets. The Company performed the transitional goodwill impairment test in the first quarter of 2002 and the annual impairment test of goodwill in the fourth quarter of 2002 and 2003. In all instances, the fair value of CS, which was based on the operation's future discounted cash flows, exceeded its carrying amount, including goodwill, and therefore, goodwill was determined not to be impaired.

[Table of Contents](#)

The following is a summary of reported net loss and loss per share as adjusted to exclude amortization of goodwill and assembled workforce, net of related tax effects, for the fiscal year ended December 31, 2001:

| | Year Ended December 31, 2001 |
|----------------------------------------------|---------------------------------------------|
| | (In thousands, except per share data) |
| Reported net loss | \$ (166,407) |
| Goodwill amortization | 673 |
| Assembled workforce amortization, net of tax | 1,092 |
| Adjusted net loss | \$ (164,642) |
| Basic and diluted net loss per share: | |
| Reported net loss | \$ (2.84) |
| Goodwill amortization | 0.01 |
| Assembled workforce amortization, net of tax | 0.02 |
| Adjusted net loss per share | \$ (2.81) |

For the years ended December 31, 2003, 2002 and 2001, the Company recorded a total of \$13.9 million, \$18.7 million and \$20.7 million, respectively, of amortization expense for identified intangibles, of which \$6.2 million, \$9.1 million and \$8.1 million, respectively, was included in cost of sales. Estimated future amortization expense for identified intangibles is \$13.9 million for 2004, of which \$6.2 million will be included in cost of sales, and \$4.6 million for 2005, of which \$2.1 million will be included in cost of sales. The following is a summary of goodwill and intangible assets as of December 31, 2003 and December 31, 2002:

| | December 31, 2003 | | | December 31, 2002 | | |
|--------------------------------------|-----------------------------|-----------------------------|---------------------------|-----------------------------|-----------------------------|---------------------------|
| | Gross Carrying Amount | Accumulated Amortization | Net Carrying Amount | Gross Carrying Amount | Accumulated Amortization | Net Carrying Amount |
| (In thousands) | | | | | | |
| Identified intangibles: | | | | | | |
| Developed core technology | \$29,059 | \$ (21,703) | \$ 7,356 | \$29,059 | \$ (16,186) | \$12,873 |
| Customer base | 33,295 | (24,112) | 9,183 | 33,295 | (17,226) | 16,069 |
| Trademark and tradename | 4,076 | (2,949) | 1,127 | 4,076 | (2,103) | 1,973 |
| Supply agreement | 3,107 | (2,248) | 859 | 3,107 | (1,603) | 1,504 |
| Subtotal of identified intangibles | 69,537 | (51,012) | 18,525 | 69,537 | (37,118) | 32,419 |
| Goodwill | 1,780 | — | 1,780 | 1,780 | — | 1,780 |
| Total goodwill and other intangibles | \$71,317 | \$ (51,012) | \$20,305 | \$71,317 | \$ (37,118) | \$34,199 |

Note 4: Restructuring, Excess Facilities and Inventory Provisions

In response to a significant reduction in industry spending, principally weak cable spending on transmission upgrades and the resulting adverse impact on Harmonic's operating results during 2001, the Company implemented a series of measures to control costs and improve operating efficiencies. These measures included three work force reductions during 2001, reducing its workforce by approximately 30%, for which the Company recorded and paid severance and other costs of \$2.5 million.

In conjunction with the 2001 cost control measures, Harmonic evaluated its facility requirements and committed to a plan to exit excess facilities and consolidate its operations, principally on Harmonic's Sunnyvale, California campus. During 2001, Harmonic recorded a charge for fixed asset impairment of \$8.3 million and excess facilities costs of \$21.8 million

[Table of Contents](#)

for a combined total of \$30.1 million to selling, general and administrative expenses. The fixed asset impairment of \$8.3 million for unrecoverable leasehold improvements was recorded as a reduction of property, plant and equipment. The excess facilities charge of \$22.3 million was offset by \$0.5 million of deferred rent and was based on future facilities costs over the estimated vacancy period, reduced by estimated sublease income.

As a result of uncertain market conditions and lower sales during the second half of 2002, the Company implemented further workforce reductions of approximately 120 full-time employees. Harmonic recorded severance and other costs totaling \$1.5 million and paid \$1.1 million during 2002 and \$0.4 million during 2003 associated with these actions. At December 31, 2003, remaining accrued severance costs were \$34 thousand and will be paid during 2004.

In addition to the work force reductions in the second half of 2002, management reassessed the accrual for the costs of excess facilities in light of the Company's reduced headcount, difficult business conditions, and a weak local commercial real estate market, and changed its estimates with regard to the expected timing and amount of sublease income due to the substantial and growing surplus of vacant commercial space in the San Francisco Bay Area. Harmonic recorded an additional excess facilities charge of \$22.5 million, net of sublease income, to selling, general and administrative expenses for facilities that Harmonic did not intend to occupy. As of December 31, 2002, accrued excess facilities cost totaled \$41.6 million of which \$6.8 million was included in current accrued liabilities and \$34.8 million in other non-current liabilities. The Company incurred cash outlays of \$3.8 million, net of \$0.2 million of sublease income, during 2002 principally for lease payments, property taxes, insurance and other maintenance fees related to vacated facilities. As of December 31, 2003, accrued excess facilities cost totaled \$34.7 million of which \$6.1 million was included in current accrued liabilities and \$28.6 million in other non-current liabilities. The Company incurred cash outlays of \$5.5 million during 2003 principally for lease payments, property taxes, insurance and other maintenance fees related to vacated facilities. In 2004, Harmonic expects to pay approximately \$6.0 million of excess facility lease costs, net of estimated sublease income, and to pay the remaining \$28.6 million, net of estimated sublease income, over the remaining lease terms through September 2010. Harmonic plans to reassess this liability quarterly and adjust as necessary based on changes in the timing and amounts of expected sublease rental income. The review performed in the third quarter of 2003 resulted in the liability being decreased by \$3.3 million due to a revision in the assumptions as to the unoccupied portion of a building. This revision was offset by a correction of straight-line rent expense of \$2.3 million as a result of a lease extension on another building. This lease extension was a condition of leasing three additional buildings at corporate headquarters and resulted in all leases terminating in September 2010. Because the effect of the correction on any quarter or year was not material to these results of operations and financial position, the non-cash adjustment was recorded in the current year. In the event we are unable to achieve expected levels of sublease rental income, we will need to revise our estimate of the liability, which could materially impact our financial position, liquidity, cash flows and results of operations.

The following table summarizes restructuring activities:

| | Workforce Reduction | Excess Facilities | Total |
|---------------------------------------|------------------------|----------------------|------------|
| | | (In thousands) | |
| Balance at January 1, 2002 | \$ — | \$22,842 | \$ 22,842 |
| Provisions | 1,505 | 22,500 | 24,005 |
| Cash payments, net of sublease income | (1,091) | (3,748) | (4,839) |
| Balance at December 31, 2002 | 414 | 41,594 | 42,008 |
| Provisions | 15 | (1,404) | (1,389) |
| Cash payments | (395) | (5,523) | (5,918) |
| Balance at December 31, 2003 | \$ 34 | \$34,667 | \$(34,701) |

As a result of the significant reduction in demand for its products, principally BAN division products, Harmonic recorded provisions of \$39.2 million during 2001 for excess and obsolete inventories in accordance with its policy and demand forecasts.

[Table of Contents](#)

Note 5: Cash, Cash Equivalents and Investments

At December 31, 2003 and 2002, cash, cash equivalents and short-term investments are summarized as follows:

| | December 31, | |
|---------------------------------------------------------|----------------|-----------|
| | 2003 | 2002 |
| | (In thousands) | |
| Cash and cash equivalents | \$ 41,877 | \$ 21,542 |
| Short-term investments: | | |
| Less than one year | 38,031 | 26,116 |
| Due in 1-2 years | 32,689 | 1,500 |
| Total short-term investments | 70,720 | 27,616 |
| Total cash, cash equivalents and short-term investments | \$112,597 | \$49,158 |

Harmonic's short-term investments are stated at fair value, which approximate the cost of investments and are comprised of principally corporate debt securities.

Note 6: Balance Sheet Details

| | December 31, | |
|--------------------------------------------------------------|----------------|-----------|
| | 2003 | 2002 |
| | (In thousands) | |
| Accounts receivable, net: | | |
| Accounts receivable | \$ 43,227 | \$ 30,959 |
| Unbilled accounts receivable | 619 | 166 |
| | 43,846 | 31,125 |
| Less: allowance for doubtful accounts, returns and discounts | (5,318) | (6,641) |
| | \$ 38,528 | \$ 24,484 |
| Inventories: | | |
| Raw materials | \$ 9,594 | \$ 10,944 |
| Work-in-process | 1,135 | 1,404 |
| Finished goods | 11,696 | 13,556 |
| | \$ 22,425 | \$ 25,904 |
| Property and equipment: | | |
| Furniture and fixtures | \$ 7,470 | \$ 7,391 |
| Machinery and equipment | 84,261 | 81,408 |
| Leasehold improvements | 25,792 | 25,700 |
| | 117,523 | 114,499 |
| Less: accumulated depreciation and amortization | (94,065) | (82,043) |
| | \$ 23,458 | \$ 32,456 |

| | December 31, | |
|---------------------------------------------|--------------|----------|
| | 2003 | 2002 |
| (In thousands) | | |
| Intangibles and other assets: | | |
| Identified intangibles, net of amortization | \$ 18,525 | \$32,419 |
| Goodwill | 1,780 | 1,780 |
| Other assets | 1,217 | 1,163 |
| | \$21,522 | \$35,362 |
| Accrued liabilities: | \$25,029 | |
| Pre-merger tax liability and other taxes | 6,040 | \$23,918 |
| Accrued excess facilities costs — current | 6,356 | 6,840 |
| Accrued compensation | 4,886 | 6,512 |
| Accrued warranty | 7,509 | 5,866 |
| Other | | 6,565 |
| | \$49,820 | \$49,701 |

Note 7: Net Loss Per Share

The basic net loss per share is computed by dividing the net loss attributable to common stockholders for the period by the weighted average number of the common shares outstanding during the period. The diluted net loss per share is the same as the basic net loss per share for 2003, 2002, and 2001 because potential common shares, such as common shares issuable upon the exercise of stock options, are only considered when their effect would be dilutive. In 2003, 2002 and 2001, 6,977,019, 7,418,456 and 4,901,394 of weighted average antidilutive securities, including options, were excluded from the net loss per share computations, respectively, because their effect is antidilutive.

Following is a reconciliation of the numerators and denominators of the basic and diluted net loss per share computations:

| | Year ended December 31, | | |
|--------------------------------------------------|-------------------------|------------|-------------|
| | 2003 | 2002 | 2001 |
| Net loss (numerator) | \$(29,433) | \$(76,918) | \$(166,407) |
| Shares calculation (denominator): | | | |
| Weighted average shares outstanding — basic | 62,288 | 59,779 | 58,540 |
| Effect of Dilutive Securities: | | | |
| Potential Common Stock relating to stock options | — | — | — |
| Average shares outstanding — diluted | 62,288 | 59,779 | 58,540 |
| Net loss per share — basic and diluted | \$ (0.47) | \$ (1.29) | \$ (2.84) |

Note 8: Credit Facilities and Long-Term Debt

Harmonic has a bank line of credit facility with Silicon Valley Bank, which provides for borrowings of up to \$13.5 million, including \$3.5 million for equipment under a secured term loan. This facility, which was amended and restated in December 2003, expires in December 2004, contains financial and other covenants including the requirement for Harmonic to maintain cash, cash equivalents and short-term investments, net of credit extensions, of not less than \$65.0 million. If Harmonic is unable to maintain this cash, cash equivalents and short-term investments balance or satisfy the additional affirmative covenant requirements, Harmonic would be in noncompliance with the facility. In the event of noncompliance by Harmonic with the covenants under the facility, Silicon Valley Bank would be entitled to exercise its remedies under the facility which include declaring all obligations immediately due and payable and disposing of the collateral if obligations were not repaid. At December 31, 2003, Harmonic was in compliance with the covenants under this line of credit facility. The December 2003

[Table of Contents](#)

amendment resulted in the company paying a fee of approximately \$8 thousand and requiring payment of approximately \$30 thousand of additional fees if the company does not maintain an unrestricted deposit of \$25.0 million with the bank. Future borrowings pursuant to the line bear interest at the bank's prime rate (4.0%) or prime plus 1.0% (prime rate plus 0.5%-1.5% for equipment borrowings) depending upon the Company's total cash position and previous six months' revenue. Borrowings are payable monthly and are collateralized by all of Harmonic's assets. As of December 31, 2003, \$1.7 million was outstanding under the equipment term loan portion of this facility of which \$1.0 million was borrowed during 2003. The term loan is payable monthly, including principal and interest at 4.0% per annum on outstanding borrowings as of December 31, 2003 and matures at various dates through January 2007. Other than standby letters of credit and guarantees (Note 14), there were no other outstanding borrowings or commitments under the line of credit facility as of December 31, 2003.

As of December 31, 2002, Harmonic's bank line of credit facility contained financial and other covenants including a minimum cash covenant established in the November 2002 modification which required the Company to maintain at least 35% of its cash, cash equivalents and short-term investments with the bank.

Note 9: Capital Stock

Preferred Stock. Harmonic has 5,000,000 authorized shares of preferred stock. On July 23, 2002, The Company classified 100,000 of these shares as Series A Participating Preferred Stock in connection with the Board's same day approval and adoption of a stockholder rights plan. Under the plan, Harmonic declared and paid a dividend of one preferred share purchase right for each share of Harmonic common stock held by our stockholders of record as of the close of business on August 7, 2002. Each preferred share purchase right entitles the holder to purchase from us one one-thousandth of a share of Series A Participating Preferred Stock, par value \$0.001 per share, at a price of \$25.00, subject to adjustment. The rights are not immediately exercisable, however, and will become exercisable only upon the occurrence of certain events. The stockholder rights plan may have the effect of deterring or delaying a change in control of Harmonic.

Stock Issuances. During 2003, Harmonic issued 10,350,000 shares of common stock in a public offering, including shares sold upon exercises of over-allotment options, at a price of \$7.40 per share. The net proceeds to the Company were approximately \$71.4 million, which is net of underwriters' discounts and commissions of approximately \$4.2 million and related legal, accounting, printing and other expenses totaling approximately \$0.9 million. The Form S-3 registration statement used in the public offering remains effective and Harmonic continues to have the ability to use the registration statement to issue various types of securities, including common stock, preferred stock, debt securities and warrants to purchase common stock from time to time, up to an aggregate of approximately \$73 million, subject to market conditions and our capital needs.

Note 10: Benefit Plans

Stock Option Plans. Harmonic has reserved 10,923,000 shares of Common Stock for issuance under various employee stock option plans. The options are granted for periods not exceeding ten years and generally vest 25% at one year from date of grant, and an additional 1/48 per month thereafter. Stock options are granted at the fair market value of the stock at the date of grant.

Director Option Plans. In May 2002, Harmonic's stockholders approved the 2002 Director Option Plan, replacing the 1995 Director Option Plan. Harmonic has a total of 428,000 shares of Common Stock reserved for issuance under the Director Plans. The Director Plans provide for the grant of non-statutory stock options to certain non-employee directors of Harmonic pursuant to an automatic, non-discretionary grant mechanism. Options are granted at the fair market value of the stock at the date of grant for periods not exceeding ten years. Initial grants generally vest monthly over three years, and subsequent grants generally vest monthly over one year.

[Table of Contents](#)

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, 2000 | 751 | 7,642 | \$ 22.73 |
| Shares authorized | 2,000 | — | — |
| Options granted | (2,717) | 2,717 | 9.06 |
| Options exercised | — | (447) | 5.50 |
| Options canceled | 1,777 | (1,777) | 19.72 |
| Options expired | — | (970) | 32.91 |
| Balance at December 31, 2001 | 1,811 | 7,165 | 17.99 |
| Shares authorized | 1,800 | — | — |
| Options granted | (1,871) | 1,871 | 9.78 |
| Options exercised | — | (205) | 3.00 |
| Options canceled | 1,038 | (1,038) | 14.59 |
| Options expired | (14) | (489) | 16.16 |
| Balance at December 31, 2002 | 2,764 | 7,304 | 16.91 |
| Shares authorized | 1,500 | — | — |
| Options granted | (1,495) | 1,495 | 3.61 |
| Options exercised | — | (85) | 2.32 |
| Options canceled | 635 | (635) | 13.11 |
| Options expired | — | (132) | 42.71 |
| Balance at December 31, 2003 | 3,404 | 7,947 | \$ 14.44 |

The following table summarizes information regarding stock options outstanding at December 31, 2003:

| Range of Exercise Prices | Stock Options Outstanding | | | Stock Options Exercisable | |
|--------------------------|------------------------------------------------|-----------------------------------------------------|---------------------------------|-----------------------------------------|---------------------------------|
| | Number Outstanding at December 31, 2003 | Weighted-Average Remaining Contractual Life (Years) | Weighted-Average Exercise Price | Number Exercisable at December 31, 2003 | Weighted Average Exercise Price |
| | (In thousands, except exercise price and life) | | | | |
| \$0.90 – 3.46 | 1,439 | 8.8 | \$ 3.30 | 79 | \$ 1.83 |
| 3.47 – 8.65 | 1,244 | 5.4 | 6.72 | 962 | 6.88 |
| 8.68 – 9.13 | 1,208 | 7.0 | 9.11 | 889 | 9.11 |
| 9.25 – 10.44 | 1,472 | 7.4 | 10.39 | 827 | 10.38 |
| 10.58 – 23.57 | 1,655 | 6.5 | 21.12 | 1,352 | 21.49 |
| 23.75 – 50.72 | 632 | 5.5 | 28.94 | 617 | 28.87 |
| 53.02 – 121.68 | 297 | 6.1 | 74.22 | 288 | 74.10 |
| | 7,947 | 6.9 | \$ 14.44 | 5,014 | \$ 18.28 |

The weighted-average fair value of options granted was \$2.74, \$7.24, and \$6.33 for 2003, 2002, and 2001, respectively.

Employee Stock Purchase Plan. In May 2002, Harmonic's stockholders approved the 2002 Employee Stock Purchase Plan (the "2002 Purchase Plan") replacing the 1995 Employee Stock Purchase Plan effective for the offering period beginning on July 1, 2002. The 2002 Purchase Plan, which has reserved 1,500,000 shares for issuance, enables employees to purchase shares at 85% of the fair market value of the Common Stock at the beginning of the offering period or end of the purchase period, whichever is lower. Each offering period has a maximum duration of two years and consists of four six-month purchase periods. Offering periods and purchase periods generally begin on the first trading day on or after

[Table of Contents](#)

January 1 and July 1 of each year. The 2002 Purchase Plan is intended to qualify as an “employee stock purchase plan” under Section 423 of the Internal Revenue Code. During 2003, 2002, and 2001, the number of shares of stock issued under the purchase plans were 725,086, 780,670, and 813,181 shares at weighted average prices of \$2.24, \$3.99, and \$4.80, respectively. The weighted-average fair value of each right to purchase shares of common stock granted under the purchase plans were \$2.15, \$5.21, and \$6.30 for 2003, 2002, and 2001, respectively. At December 31, 2003, 774,914 shares were reserved for future issuances under the 2002 Purchase Plan.

As of December 31, 2003, based on employee participation rates and its stock price, Harmonic believes that it may have insufficient shares reserved for issuance under its Purchase Plan to cover all expected purchases under offering periods that have commenced and which run through January 2, 2006. Although Harmonic has sufficient authorized shares to satisfy purchases during its current six month purchase periods ending January 2, 2004 and July 1, 2004, Harmonic believes that approximately 90,000 additional shares will be required to meet expected purchases under the six month purchase periods ending January 2, 2005, July 1, 2005 and January 2, 2006. The issuance of these additional shares requires Board and stockholder approval. Harmonic expects to request stockholder approval in May 2004. The terms of the Purchase Plan allow for the plan administrator to terminate the Purchase Plan at any time or allocate a specific number of shares to be issued at each purchase period. If additional shares are authorized to be issued in relation to these purchase periods, stock-based compensation expense may result. Stock-based compensation expense will be re-measured quarterly, will be recognized as earned using the multiple option method, will fluctuate as the price per share of Harmonic Common Stock fluctuates and could be significant. Final measurement of any stock-based compensation expense will occur on the stock purchase date at the end of each six month purchase period.

Retirement/ Savings Plan. Harmonic has a retirement/savings plan which qualifies as a thrift plan under Section 401(k) of the Internal Revenue Code. This plan allows participants to contribute up to 20% of total compensation, subject to applicable Internal Revenue Service limitations. Harmonic makes discretionary contributions to the plan of 25% of the first 4% contributed by eligible participants up to a maximum contribution per participant of \$750 per year. Such amounts totaled \$0.2 million in 2003, \$0.3 million in 2002, and \$0.3 million in 2001.

Note 11: Income Taxes

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

| | December 31, | | |
|-----------|----------------|--------|----------|
| | 2003 | 2002 | 2001 |
| | (In thousands) | | |
| Current: | | | |
| Federal | \$ — | \$ — | \$ — |
| Foreign | 300 | 279 | 2,000 |
| State | — | 65 | — |
| | 300 | 344 | 2,000 |
| Deferred: | | | |
| Federal | — | 156 | (1,580) |
| Foreign | — | — | — |
| State | — | — | (1,226) |
| | — | 156 | (2,806) |
| | \$300 | \$ 500 | \$ (806) |

[Table of Contents](#)

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

| | December 31, | | |
|------------------------------------------------------------|----------------|------------|------------|
| | 2003 | 2002 | 2001 |
| | (In thousands) | | |
| Benefit from income taxes at statutory rate | \$(10,197) | \$(26,746) | \$(58,395) |
| Differential in rates on foreign earnings | 325 | 1,183 | 6,324 |
| State taxes, net of federal benefit | (696) | (4,620) | (10,782) |
| Acquired in-process technology and non-deductible goodwill | — | — | 791 |
| Research and development credit | (551) | (5,700) | — |
| Valuation allowance | 11,129 | 41,883 | 63,026 |
| Other | 290 | (5,500) | (1,770) |
| Net provision for (benefit from) income taxes | \$ 300 | \$ 500 | \$ (806) |

Deferred tax assets (liabilities) comprise the following:

| | December 31, | | |
|--------------------------------------------|----------------|-----------|-----------|
| | 2003 | 2002 | 2001 |
| | (In thousands) | | |
| Deferred tax assets: | | | |
| Reserves and accruals | \$ 41,219 | \$ 52,121 | \$ 42,934 |
| Net operating loss carryovers | 64,918 | 48,128 | 26,892 |
| Depreciation and amortization | 4,445 | 4,613 | 4,312 |
| Research and development credit carryovers | 12,408 | 10,898 | 2,265 |
| Other | 8,182 | 2,440 | 7,716 |
| Total deferred tax assets | 131,172 | 118,200 | 84,119 |
| Valuation allowance | (123,615) | (104,909) | (63,026) |
| Net deferred tax assets | 7,557 | 13,291 | 21,093 |
| Deferred tax liabilities: | | | |
| Intangibles | (7,557) | (13,291) | (21,093) |
| Net deferred tax assets (liabilities) | \$ — | \$ — | \$ — |

Realization of deferred tax assets is dependent upon future earnings, the timing and amount of which are uncertain. Accordingly, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by \$18.7 million and \$41.9 million for the years ended December 31, 2003 and 2002, respectively.

As of December 31, 2003, the Company had tax net operating loss carryforwards for federal income tax purposes of approximately \$180.3 million, which expire beginning in the year 2020. The Company also has state net operating loss carryforwards of approximately \$31.5 million, which expire beginning in 2004. As of December 31, 2003, the Company also had federal and state tax credit carryovers of approximately \$7.6 million and \$8.5 million, respectively, available to offset future taxable income. The federal credits expire beginning 2004, while the state credits will not expire.

Utilization of the Company's net operating loss and tax credits may be subject to substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code and similar state provisions. Such an annual limitation could result in the expiration of the net operating loss before utilization.

Under the terms of the merger agreement with C-Cube, Harmonic is generally liable for C-Cube's pre-merger tax liabilities. Approximately \$20.8 million of pre-merger tax liabilities remain outstanding and Harmonic expects final settlement of these obligations to a variety of taxing authorities and LSI Logic during 2004. These amounts have been included in accrued liabilities.

Note 12: Segment Information

Operating segments are defined as components of an enterprise that engage in business activities for which separate financial information is available and evaluated by the chief operating decision maker. The Company has been organized into two operating segments: BAN, for fiber optic systems, and CS, for digital headend systems. Each segment has its own management team directing its product development, marketing strategies and its customer service requirements. A separate sales force generally supports both segments with appropriate product and market specialization as required.

The results of the reportable segments are derived directly from Harmonic's management reporting system. These results reported below are based on Harmonic's method of internal reporting and are not necessarily presented in conformity with generally accepted accounting principles. Management measures the performance of each segment based on several metrics, including revenue and income or loss from segment operations. These results are used, in part, to evaluate the performance of, and allocate resources to each of the segments. Income (loss) from segment operations excludes intangible amortization expense, corporate expenses, excess facilities charges, eliminations, and interest and other income, net. Corporate expenses and excess facilities charges, include human resources, legal, finance and other corporate departments, facility adjustment charges of \$1.4 million, \$22.5 million and \$30.1 million for the years ended December 31, 2003, 2002 and 2001, respectively, and intercompany eliminations. Net income or loss, and assets and liabilities are not internally reported by business segment.

Segment Sales and Profit:

| | Year Ended December 31, | | |
|----------------------------------------|-------------------------|-------------------|--------------------|
| | 2003 | 2002 | 2001 |
| | (In thousands) | | |
| Net sales: | | | |
| Convergent Systems (CS) | \$ 113,207 | \$ 109,718 | \$129,038 |
| Broadband Access Networks (BAN) | 69,069 | 76,914 | 74,772 |
| Total net sales | \$182,276 | \$186,632 | \$203,810 |
| | (In thousands) | | |
| Income (loss) from segment operations: | | | |
| Convergent Systems | (4,398) | (15,649) | (36,254) |
| Broadband Access Networks | \$ 1,102 | \$ (4,033) | \$ (60,103) |
| Loss from segment operations | (3,296) | (19,682) | (96,357) |
| Amortization of intangibles | (13,894) | (18,648) | (20,741) |
| Interest and other income, net | 1,412 | 931 | 1,574 |
| Facilities adjustments | 1,376 | (22,500) | (30,100) |
| Corporate expenses and eliminations | (14,731) | (16,519) | (21,589) |
| Loss before income taxes | \$(29,133) | \$(76,418) | \$(167,213) |

Geographic Information:

| | Year Ended December 31, | | |
|--------------------------------------|-------------------------|------------|------------|
| | 2003 | 2002 | 2001 |
| | (In thousands) | | |
| Net sales: | | | |
| United States | \$ 130,226 | \$ 133,222 | \$ 121,479 |
| International | 52,050 | 53,410 | 82,331 |
| Total | \$ 182,276 | \$ 186,632 | \$ 203,810 |
| Property, equipment and intangibles: | | | |
| United States | \$ 41,905 | \$ 64,863 | \$ 96,472 |
| International | 1,858 | 1,792 | 2,285 |
| Total | \$ 43,763 | \$ 66,655 | \$ 98,757 |

Major Customers. To date, a substantial majority of Harmonic's net sales have been to relatively few customers, and Harmonic expects this customer concentration to continue in the foreseeable future. In 2003, sales to Comcast accounted for 32%. In 2002, sales to Charter Communications and Comcast accounted for 18% and 10% of net sales, respectively. In 2001, sales to DIRECTV and Charter Communications accounted for 13% and 11% of net sales, respectively.

Note 13: Related Party

A director of Harmonic since January 2002 is CEO of Broadband Services Inc. (BSI). BSI has purchased products from Harmonic in connection with its supply chain management and fulfillment services business. Revenues from BSI were \$31 thousand for the year ended December 31, 2003 and \$8.9 million for the year ended December 31, 2002. Accounts receivable from BSI were zero as of December 31, 2003 and \$0.4 million as of December 31, 2002. This director is also a director of Terayon Communications, with whom the Company signed a reseller agreement for certain products during the second quarter of 2002. During 2003 and 2002, the Company purchased approximately \$3.0 million and \$1.1 million, respectively, in products from Terayon. As of December 31, 2003 and 2002, Harmonic had liabilities to Terayon of approximately \$0.3 million and \$0.5 million, respectively, for inventory purchases.

Note 14: Guarantees

Warranties. The Company accrues for estimated warranty costs at the time of product shipment. Management periodically reviews the estimated fair value of its warranty liability and adjusts based on the terms of warranties provided to customers, historical and anticipated warranty claims experience, and estimates of the timing and cost of specified warranty claims. Activity for the Company's warranty accrual, which is included in accrued liabilities is summarized below (in thousands):

| | |
|---------------------------------|-----------------|
| Balance as of January 1, 2003 | \$ 5,866 |
| Accrual for warranties | 4,602 |
| Warranty costs incurred | (5,582) |
| Balance as of December 31, 2003 | <u>\$ 4,886</u> |

Standby Letters of Credit. As of December 31, 2003 the Company's financial guarantees consisted of standby letters of credit outstanding, which were principally related to a litigation settlement, customs bond requirements and corporate purchase cards. The maximum amount of potential future payments under these arrangements was \$2.8 million.

Indemnifications. Harmonic indemnifies the members of its Board of Directors pursuant to the requirements of its bylaws, and some of its suppliers and customers for specified intellectual property rights pursuant to certain parameters and restrictions. The scope of these indemnities varies, but in some instances, includes indemnification for damages and expenses (including reasonable attorneys' fees). There have been no claims for indemnification and, accordingly, no amounts have been accrued in respect of the indemnifications provisions through December 31, 2003.

[Table of Contents](#)

Guarantees. As of December 31, 2003, Harmonic had no other guarantees outstanding.

Note 15: Commitments and Contingencies

Commitments — Facilities Leases. Harmonic leases its facilities under noncancelable operating leases which expire at various dates through September 2010. Total lease payments related to these operating leases were \$10.4 million, \$11.5 million and \$10.5 million for 2003, 2002 and 2001, respectively. Future minimum lease payments under noncancelable operating leases at December 31, 2002, are as follows (in thousands):

| | |
|------------|-----------|
| 2004 | \$ 10,053 |
| 2005 | 9,949 |
| 2006 | 11,060 |
| 2007 | 12,435 |
| 2008 | 12,486 |
| Thereafter | 22,409 |
| | <hr/> |
| | \$78,392 |
| | <hr/> |

As of December 31, 2003, \$35.3 million of these lease costs were provided for as accrued excess facility costs. See Note 4 “Restructuring, Excess Facilities and Inventory Provisions.”

Commitments — Royalties. Harmonic has obtained research and development grants under various Israeli government programs that require the payment of royalties on sales of certain products resulting from such research. During 2003, 2002 and 2001 royalty expenses were \$0.6 million, \$0.6 million and \$0.7 million, respectively.

Purchase Commitments with Contract Manufacturers and Suppliers. The Company uses several contract manufacturers and suppliers to provide manufacturing services for a substantial majority of its products. In addition, some components, sub-assembly and modules are obtained from a sole supplier or limited group of suppliers. During the normal course of business, in order to reduce manufacturing lead times and ensure adequate component supply, the Company enters into agreements with certain contract manufacturers and suppliers that allows them to procure inventory based upon criteria as defined by the Company.

Commitments — Contingencies. Harmonic’s industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patent and other intellectual property rights. In particular, leading companies in the telecommunications industry have extensive patent portfolios. From time to time, third parties, including these leading companies, have asserted and may assert exclusive patent, copyright, trademark and other intellectual property rights against us or our customers. Such assertions and claims arise in the normal course of our operations. The resolution of assertions and claims cannot be predicted with certainty. Management believes that the final outcome of such matters would not have a material adverse effect on Harmonic’s business, operating results, financial position and cash flows.

Note 16: Legal Proceedings

Between June 28 and August 25, 2000, several actions alleging violations of the federal securities laws by Harmonic and certain of its officers and directors (some of whom are no longer with Harmonic) were filed in or removed to the United States District Court for the Northern District of California. The actions subsequently were consolidated.

A consolidated complaint, filed on December 7, 2000, was brought on behalf of a purported class of persons who purchased Harmonic’s publicly traded securities between January 19 and June 26, 2000. The complaint also alleged claims on behalf of a purported subclass of persons who purchased C-Cube securities between January 19 and May 3, 2000. In addition to Harmonic and certain of its officers and directors, the complaint also named C-Cube Microsystems Inc. and several of its officers and directors as defendants. The complaint alleged that, by making false or misleading statements regarding Harmonic’s prospects and customers and its acquisition of C-Cube, certain defendants violated

[Table of Contents](#)

sections 10(b) and 20(a) of the Securities Exchange Act of 1934. The complaint also alleged that certain defendants violated section 14(a) of the Exchange Act and sections 11, 12(a)(2), and 15 of the Securities Act of 1933 by filing a false or misleading registration statement, prospectus, and joint proxy in connection with the C-Cube acquisition.

On July 3, 2001, the Court dismissed the consolidated complaint with leave to amend. An amended complaint alleging the same claims against the same defendants was filed on August 13, 2001. Defendants moved to dismiss the amended complaint on September 24, 2001. On November 13, 2002, the Court issued an opinion granting the motions to dismiss the amended complaint without leave to amend. Judgment for defendants was entered on December 2, 2002. On December 12, 2002, plaintiffs filed a motion to amend the judgment and for leave to file an amended complaint pursuant to Rules 59(e) and 15(a) of the Federal Rules of Civil Procedure. On June 6, 2003, the Court denied plaintiffs' motion to amend the judgment and for leave to file an amended complaint. Plaintiffs filed a notice of appeal on July 1, 2003. Plaintiffs filed their opening brief on December 3, 2003. Defendants filed their answering briefs on March 2, 2004. Plaintiffs' optional reply brief is due fourteen days from service of the answering briefs. No hearing has been scheduled yet.

A derivative action purporting to be on behalf of Harmonic was filed against its then-current directors in the Superior Court for the County of Santa Clara on September 5, 2000. Harmonic also was named as a nominal defendant. The complaint is based on allegations similar to those found in the securities class action and claims that the defendants breached their fiduciary duties by, among other things, causing Harmonic to violate federal securities laws. The derivative action was removed to the United States District Court for the Northern District of California on September 20, 2000. All deadlines in this action were stayed pending resolution of the motions to dismiss the securities class action. On July 29, 2003, the Court approved the parties' stipulation to dismiss this derivative action without prejudice and to toll the applicable limitations period. The limitations period is tolled until fourteen days after (1) defendants provide plaintiff with a copy of the mandate issued by the Ninth Court in the securities action or (2) either party provides written notice of termination of the tolling period, whichever is first.

A second derivative action purporting to be on behalf of Harmonic was filed in the Superior Court for the County of Santa Clara on May 15, 2003. It alleges facts similar to those previously alleged in the securities class action and the federal derivative action. The complaint names as defendants former and current Harmonic officers and directors, along with former officers and directors of C-Cube Microsystems, Inc., who were named in the securities class action. The complaint also names Harmonic as a nominal defendant. The complaint alleges claims for abuse of control, gross mismanagement, and waste of corporate assets against the Harmonic defendants, and claims for breach of fiduciary duty, unjust enrichment, and negligent misrepresentation against all defendants. On July 22, 2003, the Court approved the parties' stipulation to stay the case pending resolution of the appeal in the securities class action. Although the parties initially agreed in principle to a dismissal without prejudice on similar terms as in the federal derivative action, after further discussion, the parties decided that the stay currently in place suffices to protect their respective interests.

Based on its review of the complaints filed in the securities class action, Harmonic believes that it has meritorious defenses and intends to defend itself vigorously. There can be no assurance, however, that Harmonic will prevail. No estimate can be made of the possible range of loss associated with the resolution of this contingency and accordingly, Harmonic has not recorded a liability. An unfavorable outcome of this litigation could have a material adverse effect on Harmonic's business, operating results, financial position and cash flows.

Harmonic announced on July 17, 2003 a settlement of its litigation with Power and Telephone Supply (P&T) in Federal court in Tennessee. Under the terms of the settlement agreement, Harmonic agreed to pay \$2.8 million to P&T in release of all outstanding claims. The settlement follows summary judgment against Harmonic on certain of the claims made by P&T under a Tennessee statute relating to retailers and suppliers. These claims arose from the cancellation of purchase orders on P&T by one of its end-customers in 2000. Harmonic's operating results for the second quarter and twelve months of 2003 include a charge to general and administrative expense of approximately \$2.7 million related to the settlement with P&T. The settlement charge is net of the value of products returned and other costs. Harmonic paid \$1.0 million of the settlement on July 24, 2003 and paid the balance of \$1.8 million on January 15, 2004.

[Table of Contents](#)

On July 3, 2003, Stanford University and Litton Systems filed a complaint in U.S. District Court for the Central District of California alleging that optical fiber amplifiers incorporated into certain of Harmonic's products infringe U.S. Patent No. 4,859,016. This patent expired in September 2003. The complaint seeks injunctive relief, royalties and damages. Harmonic has not been served in the case. Harmonic is currently evaluating its position with respect to this patent and has engaged in discussions with the plaintiff regarding potential settlement of the matter. At this time, Harmonic is unable to determine whether it will be able to settle this litigation on reasonable terms or at all, nor can we predict the impact of an adverse outcome of this litigation if it elects to defend against it. No estimate can be made of the possible range of loss associated with the resolution of this contingency and accordingly, we have not recorded a liability associated with the outcome of a negotiated settlement or an unfavorable verdict in litigation. An unfavorable outcome of this matter could have a material adverse effect on Harmonic's business, operating results, financial position and cash flows.

Item 9. Changes In and Disagreements With Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Our chief executive officer and our chief financial officer participated in the evaluation of the effectiveness of the Company's "disclosure controls and procedures" (as defined in the Securities Exchange Act of 1934, as amended (the "Exchange Act"), Rules 13a-15(e) or 15d-15(e)) as of December 31, 2003, and have concluded that our disclosure controls and procedures were effective to ensure the timely collection, evaluation and disclosure of information relating to the Company that could potentially be subject to disclosure under the Exchange Act and the rules and regulations promulgated thereunder. There were no significant changes in our internal controls identified in connection with the evaluation as of December 31, 2003 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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 2004 Annual Meeting of Stockholders, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the "2004 Proxy Statement"), not later than 120 days after the end of the fiscal year covered by this Report, and certain information included in the 2004 Proxy Statement is incorporated herein by reference.

Item 10. Directors and Executive Officers of Registrant

Information concerning our directors required by this Item will be set forth in the 2004 Proxy Statement under the caption "Election of Directors" and is incorporated herein by reference.

Information concerning our executive officers required by this Item is included in Part I, Item 1 hereof under the caption, "Executive Officers of Registrant".

Information relating to compliance with Section 16(a) of the Securities Exchange Act of 1934 will be set forth in the 2004 Proxy Statement under the caption "Section 16(a) Beneficial Ownership Reporting Compliance" and is incorporated herein by reference.

Information concerning our audit committee and our audit committee financial expert will be set forth in our 2004 Proxy Statement and is incorporated herein by reference.

Harmonic has adopted a Code of Business Conduct and Ethics for Senior Operational and Financial Leadership (the "Code") which applies to its Chairman and Chief Executive Officer, its Chief Financial Officer, its Corporate Controller and

[Table of Contents](#)

other senior operational and financial management. The Code of Ethics is available on the Company's website at www.harmonicinc.com.

Harmonic intends to satisfy the disclosure requirement under Item 10 of Form 8-K regarding an amendment to, or waiver from, a provision of this Code of Ethics by posting such information on our website, at the address specified above, and to the extent required by the listing standards of the Nasdaq Stock Market, by filing a Current Report on Form 8-K with the Securities and Exchange Commission disclosing such information.

Item 11. *Executive Compensation*

The information required by this Item will be set forth in the 2004 Proxy Statement under the caption "Executive Compensation" and is incorporated herein by reference.

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

Information related to security ownership of certain beneficial owners and security ownership of management and related stockholder matters will be set forth in the 2004 Proxy Statement under the captions "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information" and is incorporated herein by reference.

Item 13. *Certain Relationships and Related Transactions*

None.

Item 14. *Principal Accounting Fees and Services*

The information required for this item will be set forth in the 2004 Proxy Statement in the section titled "Independent Public Accountants" under the captions "Audit Fees," "Audit Related Fees," "Tax Fees" and "All Other Fees" and is incorporated herein by reference.

PART IV

Item 15. *Exhibits, Financial Statement Schedules and Reports on Form 8-K*

- (a) (1) Financial Statements. See Index to Consolidated Financial Statements at Item 8 on page 45 of this Annual Report on Form 10-K:
- (a) (2) Financial Statement Schedules. The following are filed as part of this Annual Report on Form 10-K:

Financial Statement Schedule II — Valuation and Qualifying Accounts and Reserves.

All other financial statement schedules have been omitted because the information is not required to be set forth herein, is not applicable or is included in the financial statements or notes thereto.

Schedule II

Valuation and Qualifying Accounts and Reserves

Allowance for Doubtful Accounts, Returns and Discounts

| | Balance at Beginning of Period | Charges to Revenue | Charges to Expense | Deduction from Reserves | Balance at End of Period |
|------|--------------------------------------|-----------------------|-----------------------|-------------------------------|--------------------------------|
| | | | (In thousands) | | |
| 2003 | 6,641 | 769 | (1,623) | (469) | 5,318 |
| 2002 | 8,595 | 2,272 | 3,576 | (7,802) | 6,641 |
| 2001 | 6,920 | 9,776 | 3,988 | (12,089) | 8,595 |

(a) (3) Exhibits. The documents listed in the Exhibit Index of this Annual Report on Form 10-K are filed herewith. Copies of the exhibits listed in the Exhibit Index will be furnished, upon request, to holders or beneficial owners of Harmonic's Common Stock.

(b) Reports on Form 8-K.

| Date | |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| October 16, 2003 | On October 16, 2003, the Company issued a press release announcing results for the quarter ended September 26, 2003 and furnished its press release on Form 8-K. |
| October 24, 2003 | On October 24, 2003, the Company filed its unaudited condensed consolidated financial statements as of and for the period ended September 26, 2003 on Form 8-K for purposes of incorporating by reference these financial statements into Harmonic Registration Statement on Form S-3 (File No. 333-84430) filed by Harmonic under the Securities Act of 1933, as amended. |
| November 3, 2003 | On October 29, 2003, the Company entered into an Underwriting Agreement with UBS Securities LLC, SoundView Technology Corporation and Needham & Company, Inc. as managing underwriters on behalf of the several underwriters listed in Schedule A thereto (collectively, the "Underwriters") relating to the offering and sale of 9 million shares of the Company's common stock ("Common Stock") at a purchase price to the public of \$7.40 per share. In the Underwriting Agreement, the Company granted to the Underwriters an option to purchase from the Company, solely for the purpose of covering over-allotments, up to 1.35 million additional shares of Common Stock and furnished its press release on Form 8-K. |
| November 13, 2003 | On November 12, 2003, the Company issued a press release announcing that the underwriters of its public offering of 9 million shares of common stock at a price of \$7.40 per share had exercised their option to purchase 1.35 million additional shares of common stock to cover over-allotments, resulting in an aggregate public offering price from the over-allotment shares of \$9.99 million, and furnished its press release on Form 8-K. |

(c) See response to Item 15(a)(3) above.

(d) See response to Item 15(a)(2) above.

SIGNATURES

Pursuant to the requirements of Section 13 or 15 (d) of the Securities Act of 1934, the Registrant, Harmonic Inc., a Delaware corporation, has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Sunnyvale, State of California, on March 8, 2004.

HARMONIC INC.

By: /s/ ANTHONY J. LEY

Anthony J. Ley
Chairman, President and Chief Executive Officer

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

| Signature | Title | Date |
|--------------------------------------------------------------|-----------------------------------------------------------------------------|---------------|
| <u>/s/ ANTHONY J. LEY</u> (Anthony J. Ley) | Chairman, President & Chief Executive Officer (Principal Executive Officer) | March 8, 2004 |
| <u>/s/ ROBIN N. DICKSON</u> (Robin N. Dickson) | Chief Financial Officer (Principal Financial and Accounting Officer) | March 8, 2004 |
| <u>/s/ E. FLOYD KVAMME</u> (E. Floyd Kvamme) | Director | March 8, 2004 |
| <u>/s/ WILLIAM REDDERSEN</u> (William Reddersen) | Director | March 8, 2004 |
| <u>/s/ LEWIS SOLOMON</u> (Lewis Solomon) | Director | March 8, 2004 |
| <u>/s/ MICHEL L. VAILLAUD</u> (Michel L. Vaillaud) | Director | March 8, 2004 |
| <u>/s/ DAVID R. VAN VALKENBURG</u> (David Van Valkenburg) | Director | March 8, 2004 |

EXHIBIT INDEX

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

Exhibit
Number

| | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.1(v) | Agreement and Plan of Merger and Reorganization by and among C-Cube Microsystems, Inc. and the Registrant dated October 27, 1999 |
| 3.1(ix) | Certificate of Incorporation of Registrant as amended |
| 3.2(x) | Certificate of Designation of Rights, Preferences and Privileges of Series A Participating in Preferred Stock of Registrant |
| 3.3(x) | Amended and Restated Bylaws of Registrant |
| 4.1(i) | Form of Common Stock Certificate |
| 4.2(x) | Preferred Stock Rights Agreement dated July 24, 2002 between the Registrant and Mellon Investor Services LLC |
| 10.1(i) | Form of Indemnification Agreement |
| 10.2(i)* | 1988 Stock Option Plan and form of Stock Option Agreement |
| 10.3(i)* | 1995 Stock Plan and form of Stock Option Agreement |
| 10.4(i)* | 1995 Employee Stock Purchase Plan and form of Subscription Agreement |
| 10.5(i)* | 1995 Director Option Plan and form of Director Option Agreement |
| 10.6(i) | Registration and Participation Rights and Modification Agreement dated as of July 22, 1994 among Registrant and certain holders of Registrant's Common Stock |
| 10.7(ii) | Business Loan Agreement, Commercial Security Agreement and Promissory Note dated August 26, 1993, as amended on September 14, 1995, between Registrant and Silicon Valley Bank |
| 10.8(ii) | Facility lease dated as of January 12, 1996 by and between Eastrich No. 137 Corporation and Company |
| 10.9* | Change of Control Severance Agreement dated February 20, 2004 between Registrant and Anthony J. Ley |
| 10.10* | Form of Change of Control Severance Agreement between Registrant and certain executive officers of Registrant |
| 10.11(iv)* | 1997 Nonstatutory Stock Option Plan |
| 10.12(vi)* | 1999 Nonstatutory Stock Option Plan |
| 10.13(vii) | Lease Agreement for 603-611 Baltic Way, Sunnyvale, California |
| 10.14(vii) | Lease Agreement for 1322 Crossman Avenue, Sunnyvale, California |
| 10.15(vii) | Lease Agreement for 646 Caribbean Drive, Sunnyvale, California |
| 10.16(vii) | Lease Agreement for 632 Caribbean Drive, Sunnyvale, California |
| 10.17(vii) | First Amendment to the Lease Agreement for 549 Baltic Way, Sunnyvale, California |
| 10.18(ix) | Restated Non-Recourse Receivables Purchase Agreement dated September 25, 2001 between Registrant and Silicon Valley Bank |
| 10.19(ix) | Modification dated December 14, 2001 to the Restated Non-Recourse Receivables Purchase Agreement dated September 25, 2001, between Registrant and Silicon Valley Bank |
| 10.21(xi) | Amendment to Loan Documents, dated September 26, 2003, by and between Silicon Valley Bank and Harmonic Inc. |
| 10.22(xii) | 2002 Director Option Plan and Form of Stock Option Agreement |
| 10.23(xii) | 2002 Employee Stock Purchase Plan and Form of Subscription Agreement |
| 10.24(viii) | Supply License and Development Agreement, dated as of October 27, 1999, by and between C-Cube Microsystems and Harmonic |
| 10.25 | Amended and Restated Loan and Security Agreement by and between Harmonic Inc., as Borrower, and Silicon Valley Bank, as Lender, dated as of December 19, 2003 |
| 21.1 | Subsidiaries of Registrant |
| 23.1 | Consent of Independent Accountants |
| 31.1 | Certification of Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 |
| 31.2 | Certification of Principal Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 |

[Table of Contents](#)

| Exhibit Number | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 32.1 | Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |
| 32.2 | Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |

- * Indicates a management contract or compensatory plan or arrangement relating to executive officers or directors of the Company.
- (i) Previously filed as an Exhibit to the Company's Registration Statement on Form S-1 No. 33-90752.
 - (ii) Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 1995.
 - (iii) Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 1996.
 - (iv) Previously filed as an Exhibit to the Company's Registration Statement on Form S-8 dated January 14, 1998.
 - (v) Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated November 1, 1999.
 - (vi) Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 1999.
 - (vii) Previously filed as an Exhibit to the Company's Amendment to its Quarterly Report on Form 10-Q/ A for the quarter ended June 30, 2000.
 - (viii) Previously filed as an Exhibit to the Company's Registration Statement on Form S-4 No. 333-33148.
 - (ix) Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2001.
 - (x) Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated July 25, 2002.
 - (xi) Previously filed as an Exhibit to the Company Quarterly Report on Form 10-Q for the quarter ended September 26, 2003.
 - (xii) Previously filed as an Exhibit to the Company's Current Annual Report on Form 10-K for the year ended December 31, 2002.

HARMONIC INC.

CHANGE OF CONTROL SEVERANCE AGREEMENT

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

RECITALS

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.

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) Bonus Payment. A cash payment in an amount equal to twice either: a) 50% of the established annual target bonus or b) the average of the actual bonuses paid in each of the two prior years, whichever is greater.

(3) 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 dependent 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. For purposes of Title X of the Consolidated Budget Reconciliation Act of 1985 ("COBRA"), the date of the "qualifying event" for Employee and his dependent shall be the date upon which the Company-Paid Coverage terminates.

(4) Option and Restricted Stock Accelerated Vesting. One hundred percent (100%) of the unvested portion of any outstanding stock option or restricted stock held by the Employee shall automatically be accelerated in full so as to become completely vested and all such outstanding stock options shall be exercisable for a period of one year after such termination.

(5) 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 or within twelve (12) months of Termination Date at the election of the Employee.

(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 eighteen (18) -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

2

(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 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 Employee's Company base salary for the twelve months preceding the Change of Control.

(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;

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

3

(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 by a 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.

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.

4

(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 directed shall be 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.

(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. This Agreement shall be deemed to have been executed and delivered within the State of California and the validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of California, without regard to choice of law principles.

(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.

[HARMONIC LOGO]

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, INC.

By: /s/ David R. Van Valkenburg

Title: Chairperson, Harmonic Compensation and Equity
Ownership Committee

Date: March 1, 2004

EMPLOYEE

Name: /s/ Anthony J. Ley

Date: March 1, 2004

HARMONIC INC.

FORM OF CHANGE OF CONTROL SEVERANCE AGREEMENT

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

RECITALS

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.

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 one hundred percent (100%) of the Employee's Annual Compensation;

(2) Bonus Payment. A cash payment in an amount equal to either 50% of the established annual target bonus or the average of the actual bonus paid in each of the two prior years, whichever is greater.

(3) 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 dependent shall also be covered at Company expense. Company- Paid Coverage shall continue until the earlier of (i) one year 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. For purposes of Title X of the Consolidated Budget Reconciliation Act of 1985 ("COBRA"), the date of the "qualifying event" for Employee and his dependent shall be the date upon which the Company-Paid Coverage terminates.

(4) Option and Restricted Stock Accelerated Vesting. One hundred percent (100%) of the unvested portion of any outstanding stock option or restricted stock held by the Employee shall automatically be accelerated in full so as to become completely vested and all such outstanding stock options shall be exercisable for a period of one year after such termination.

(5) 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 or within twelve (12) months of Termination Date at the election of the Employee.

(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 eighteen (18) -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

2

(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 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 Employee's Company base salary for the twelve months preceding the Change of Control.

(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;

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

3

(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 by a 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.

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.

4

(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 directed shall be 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.

(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. This Agreement shall be deemed to have been executed and delivered within the State of California and the validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of California, without regard to choice of law principles.

(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.

[HARMONIC LOGO]

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, INC.

By: _____

Title: _____

Date: _____

EMPLOYEE

Name: _____

Date: _____

AMENDED AND RESTATED
 LOAN AND SECURITY AGREEMENT
 by and between
 HARMONIC INC., AS BORROWER
 and
 SILICON VALLEY BANK, AS LENDER
 December 19, 2003

TABLE OF CONTENTS

| | | PAGE |
|----|-------------------------------------------------------------------------|------|
| 1. | DEFINITIONS; ACCOUNTING AND OTHER TERMS..... | 1 |
| 2. | LOAN AND TERMS OF PAYMENT..... | 1 |
| | 2.1 Promise to Pay..... | 1 |
| | 2.2 Equipment Advances..... | 2 |
| | 2.3 Overadvances..... | 3 |
| | 2.4 Interest Rate, Payments..... | 3 |
| | 2.5 Fees..... | 4 |
| 3. | CONDITIONS OF LOANS..... | 4 |
| | 3.1 Conditions Precedent to Initial Credit Extension..... | 4 |
| | 3.2 Conditions Precedent to all Credit Extensions..... | 4 |
| 4. | CREATION OF SECURITY INTEREST..... | 4 |
| | 4.1 Grant of Security Interest..... | 4 |
| | 4.2 Authorization to File; Delivery of Additional Documentation..... | 5 |
| 5. | REPRESENTATIONS AND WARRANTIES..... | 5 |
| | 5.1 Due Organization; Organizational Structure; Authorization..... | 5 |
| | 5.2 Places of Business; Location of Collateral..... | 5 |
| | 5.3 Collateral..... | 5 |
| | 5.4 Litigation..... | 6 |
| | 5.5 No Material Adverse Change in Financial Statements..... | 6 |
| | 5.6 Taxes..... | 6 |
| | 5.7 Solvency..... | 6 |
| | 5.8 Existing Term Debt..... | 6 |
| | 5.9 Regulatory Compliance..... | 6 |
| | 5.10 Subsidiaries..... | 7 |
| | 5.11 Full Disclosure..... | 7 |
| 6. | AFFIRMATIVE COVENANTS..... | 7 |

| | | |
|-----|--------------------------------------------------|---|
| 6.1 | Government Compliance..... | 7 |
| 6.2 | Financial Statements, Reports, Certificates..... | 7 |
| 6.3 | Inventory; Returns..... | 8 |

TABLE OF CONTENTS
(CONTINUED)

| | | PAGE |
|------|-----------------------------------------------------------------------|------|
| 6.4 | Collateral..... | 8 |
| 6.5 | Taxes; Pension Contributions..... | |
| 9 | | |
| 6.6 | Insurance..... | 9 |
| 6.7 | Financial Covenant..... | 9 |
| 6.8 | Registration of Intellectual Property Rights..... | 10 |
| 6.9 | Payment of Existing Term Debt..... | 10 |
| 6.10 | Use of Proceeds..... | 10 |
| 6.11 | Remittance of Proceeds..... | 10 |
| 6.12 | Primary Accounts..... | 10 |
| 6.13 | Account Control Agreements..... | 10 |
| 6.14 | Further Assurances..... | 10 |
| 7. | NEGATIVE COVENANTS..... | 11 |
| 7.1 | Dispositions..... | 11 |
| 7.2 | Changes in Business, Ownership, Management or Business Locations..... | 11 |
| 7.3 | Mergers or Acquisitions..... | 11 |
| 7.4 | Indebtedness..... | 11 |
| 7.5 | Encumbrance..... | 11 |
| 7.6 | Distributions; Investments..... | 12 |
| 7.7 | Transactions with Affiliates..... | 12 |
| 7.8 | Subordinated Debt..... | 12 |
| 7.9 | Compliance..... | 12 |
| 8. | EVENTS OF DEFAULT..... | 12 |
| 8.1 | Payment Default..... | 12 |
| 8.2 | Covenant Default..... | 12 |
| 8.3 | Material Adverse Change..... | 12 |
| 8.4 | Attachment..... | 13 |
| 8.5 | Insolvency..... | 13 |
| 8.6 | Other Agreements..... | 13 |
| 8.7 | Judgments..... | 13 |
| 8.8 | Misrepresentations..... | 13 |

TABLE OF CONTENTS
(CONTINUED)

| | PAGE |
|------------------------------------------------------|------|
| 8.9 Guaranty..... | 13 |
| 9. BANK'S RIGHTS AND REMEDIES..... | 13 |
| 9.1 Rights and Remedies..... | 14 |
| 9.2 Power of Attorney..... | 14 |
| 9.3 Accounts Collection..... | 16 |
| 9.4 Bank Expenses..... | 16 |
| 9.5 Bank's Liability for Collateral..... | 16 |
| 9.6 Remedies Cumulative..... | 16 |
| 9.7 Demand Waiver..... | 16 |
| 10. NOTICES..... | 16 |
| 11. CHOICE OF LAW , VENUE AND JURY TRIAL WAIVER..... | 17 |
| 12. GENERAL PROVISIONS..... | 17 |
| 12.1 Successors and Assigns..... | 17 |
| 12.2 Indemnification..... | 17 |
| 12.3 Time of Essence..... | 17 |
| 12.4 Severability of Provisions..... | 17 |
| 12.5 Amendments in Writing; Integration..... | 17 |
| 12.6 Counterparts..... | 18 |
| 12.7 Survival..... | 18 |
| 12.8 Confidentiality..... | 18 |
| 12.9 Attorneys' Fees, Costs and Expenses..... | 18 |
| 13. DEFINITIONS..... | 18 |

iii.

THIS AMENDED AND RESTATED LOAN AND SECURITY AGREEMENT (as amended, restated, or otherwise modified from time to time, this "AGREEMENT"), dated as of December 19, 2003, is by and between SILICON VALLEY BANK ("BANK"), whose address is 3003 Tasman Drive, Santa Clara, California, 95054, and HARMONIC INC., a Delaware corporation ("BORROWER"), whose address is 549 Baltic Way, Sunnyvale, California 94089, and provides the terms on which Bank will lend to Borrower and Borrower will repay Bank. The parties hereto agree as follows:

1. DEFINITIONS; ACCOUNTING AND OTHER TERMS

Capitalized terms used herein shall have the meanings given to such terms in Section 13 of this Agreement. Accounting terms not defined in this Agreement will be construed according to GAAP. Calculations and determinations must be made following GAAP. The term "financial statements" includes the notes and schedules thereto. The terms "including" and "includes" always mean "including (or includes) without limitation," in this or any other Loan Document.

2. LOAN AND TERMS OF PAYMENT

2.1 PROMISE TO PAY.

Borrower promises to pay Bank the unpaid principal amount of all Advances and interest on the unpaid principal amount of the Advances.

2.1.1 ADVANCES.

(a) Bank will make Advances not exceeding the Committed Revolving Line minus (A) the outstanding principal balance of the Advances minus (B) the amount of all outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit). Amounts borrowed hereunder that remain available for borrowing under this Agreement may be repaid and reborrowed prior to the Maturity Date.

(b) To obtain an Advance, Borrower must notify Bank by facsimile or telephone by 12:00 noon Pacific Time on the Business Day the Advance is to be made. Borrower must promptly confirm the notification by delivering to Bank the Loan Payment/Advance Request Form attached as Exhibit B (the "PAYMENT/ADVANCE FORM"). Bank will credit Advances to Borrower's deposit account. Bank may make Advances under this Agreement based on instructions from a Responsible Officer or his or her designee or without instructions if the Advances are necessary to meet Obligations which have become due. Bank may rely on any telephone notice given by a person whom Bank believes is a Responsible Officer or designee. Borrower will indemnify Bank for any loss Bank suffers due to such reliance.

(c) The Committed Revolving Line shall terminate on the Maturity Date, and all Advances are immediately due and payable on the Maturity Date.

2.1.2 LETTERS OF CREDIT.

(a) Bank will issue or have issued standby Letters of Credit for Borrower's account not exceeding the amount available under the Committed Revolving Line (each, a "LETTER OF CREDIT"). Each Letter of Credit will have an expiry date of no later than 180 days after the Maturity Date, but Borrower's reimbursement obligation will be secured by cash in an amount equal to 105% of the face amount of all such Letters of Credit plus all interest, fees, and costs due or to become due in connection therewith on terms acceptable to Bank at any time after the Maturity Date if such Maturity Date is not extended by Bank or if an Event of Default occurs and continues. Borrower agrees to execute any further documentation in connection with the Letters of Credit as Bank may reasonably request.

(b) Prior to or simultaneously with the opening of each Letter of Credit, Borrower shall pay to Bank Bank's customary fees (subject to negotiation) in connection with the opening of a letter of credit (the "LETTER OF CREDIT FEES"). The Letter of Credit Fees shall be paid upon the opening of each Letter of Credit and upon each anniversary thereof, if required. In addition, Borrower shall pay to Bank, for its own account, any and all additional issuance, negotiation, processing, transfer or other fees to the extent and as and when required by the provisions of any application for Letters of Credit. All Letter of Credit Fees shall be part of the Obligations.

(c) If any Letter of Credit is drawn upon, such amount shall constitute an Advance but shall be immediately due and payable. If such amount is not paid immediately, then the full amount thereof shall accrue interest at the rate set forth in Section 2.4(a).

2.2 EQUIPMENT ADVANCES.

(a) Through September 18, 2004 (the "EQUIPMENT AVAILABILITY END DATE"), Bank will make advances (each, an "EQUIPMENT ADVANCE" and, collectively, "EQUIPMENT ADVANCES") not exceeding the Committed Equipment Line.

(b) Interest accrues from the date of each Equipment Advance (each, an "EQUIPMENT ADVANCE FUNDING DATE") at the rate in Section 2.4(a). Each Equipment Advance is payable in 36 equal monthly installments of principal, plus accrued interest, beginning on the first of the month following the Equipment Advance Funding Date for such Equipment Advance and ending on the Equipment Maturity Date for such Equipment Advance. Equipment Advances when repaid may not be reborrowed.

(c) To obtain an Equipment Advance, Borrower must provide notice in the form of a Payment/Advance Form to Bank (the notice is irrevocable) by facsimile no later than 12:00 noon Pacific Time one Business Day before the day on which the Equipment Advance is to be made. The Payment/Advance Form must be signed by a Responsible Officer or designee and include a copy of the invoice for the Equipment being financed.

(d) The outstanding principal amount of term loans previously advanced by Bank to Borrower pursuant to that certain Loan and Security Agreement dated March 28, 2003, as amended by that Amendment to Loan Documents dated July 17, 2003, as further amended by that certain Amendment to Loan Documents dated September 26, 2003, are

2.

set forth on Schedule A attached hereto (the "EXISTING EQUIPMENT DEBT"). The Existing Equipment Debt shall, for all purposes hereof, be "Equipment Advances" hereunder and be governed by all the terms and conditions of this Agreement, except that the principal of said Existing Equipment Debt shall continue to be payable in accordance with the amortization schedule set forth on Schedule A. The Existing Equipment Debt shall be taken into account in determining the maximum amount of Equipment Advances under Section 2.2(a).

2.3 OVERADVANCES.

If, at any time, Borrower's Obligations hereunder exceed the Committed Revolving Line, Borrower shall immediately pay Bank the excess.

2.4 INTEREST RATE, PAYMENTS.

(a) ADVANCES. Advances accrue interest on the outstanding principal balance thereof at a per annum rate equal one percentage point (1.00%) above the Prime Rate. Equipment Advances accrue interest on the outstanding principal balance thereof at a per annum rate equal to one and one-half percentage points (1.50%) above the Prime Rate. After an Event of Default has occurred, Obligations shall accrue interest at a rate per annum equal to two percent (2%) above the rate effective immediately before the Event of Default. The interest rate increases or decreases when the Prime Rate changes. Interest is computed on a 360 day year for the actual number of days elapsed.

(b) INTEREST RATE REDUCTION. If Borrower maintains the revenue guidelines for each time period set forth below, and provided no Event of Default has occurred and is continuing, then the interest rate set forth in Section 2.4(a) above with respect to the Advances and the Equipment Advances shall be reduced by one percentage point (1.00%) for the three months following each such period of compliance, but, in any event, shall not be less than the Prime Rate.

| MINIMUM REVENUE ----- | SIX MONTHS ENDING ----- |
|--------------------------|----------------------------|
| \$85,000,000 | 12/31/03 |
| \$70,000,000 | 4/2/04 |
| \$68,000,000 | 7/2/04 |
| \$72,000,000 | 10/1/04 |

(c) PAYMENTS. Interest due on the Advances and Equipment Advances is payable on the first of each month. Bank may debit any of Borrower's deposit accounts, including account number 0341964970, for principal and interest payments owing or any amounts Borrower owes Bank. Bank will notify Borrower when it debits Borrower's accounts. These debits are not a set-off. Payments received after 12:00 noon Pacific Time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment is due the next Business Day and additional fees or interest accrue.

3.

2.5 FEES.

Borrower will pay:

(a) LOAN FEE. Fully earned, non-refundable loan fees in the amount of \$25,000 for the Committed Revolving Line and in the amount of \$5,111.50 for the Committed Equipment Line are due on or before the Closing Date. Borrower shall receive a one-time credit in the amount of \$21,875 toward payment of the Committed Revolving Line fee. If, at any time, Borrower fails to maintain a minimum aggregate amount of \$25,000,000 of unrestricted funds on deposit for 10 consecutive Business Days with SVB Asset Management and/or SVB Securities, Borrower shall pay an additional \$25,000 fee for the Committed Revolving Line and an additional \$5,111.50 fee for the Committed Equipment Line.

(b) BANK EXPENSES. All Bank Expenses (including reasonable attorneys' fees and expenses) incurred through the date of this Agreement are payable upon demand, and Bank Expenses incurred after the date of this Agreement are payable within ten (10) Business Days after delivery of invoice to Borrower.

3. CONDITIONS OF LOANS

3.1 CONDITIONS PRECEDENT TO INITIAL CREDIT EXTENSION.

Bank's obligation to make the initial Credit Extension is subject to the condition precedent that it receive the agreements, documents, and fees it requires.

3.2 CONDITIONS PRECEDENT TO ALL CREDIT EXTENSIONS.

Bank's obligation to make each Credit Extension, including the initial Credit Extension, is subject to the following:

(a) timely receipt of any Payment/Advance Form; and

(b) the representations and warranties in Section 5 must be materially true on the date of the Payment/Advance Form and on the effective date of each Advance and no Event of Default may have occurred and be continuing, or result from such Advance. Each Credit Extension is Borrower's representation and warranty on that date that the representations and warranties of Section 5 remain true in all material respects; provided, however, that those representations and warranties expressly referring to another date shall be true in all material respects as of such date only.

4. CREATION OF SECURITY INTEREST

4.1 GRANT OF SECURITY INTEREST.

Borrower grants Bank a continuing security interest in all presently existing and later acquired Collateral to secure all Obligations and performance of each of Borrower's duties under the Loan Documents. Any security interest

will be a first priority security interest in the Collateral. If this Agreement is terminated, Bank's lien and security interest in the Collateral

4.

will continue until Borrower fully satisfies its Obligations (other than inchoate indemnity obligations).

4.2 AUTHORIZATION TO FILE; DELIVERY OF ADDITIONAL DOCUMENTATION.

Borrower authorizes Bank to file financing statements without notice to Borrower, with all appropriate jurisdictions, as Bank deems appropriate, in order to perfect or protect Bank's security interest in the Collateral. Borrower shall execute and deliver to Bank, at the request of Bank, all documents that Bank may reasonably request, in form satisfactory to Bank, to perfect and continue perfected Bank's security interest in the Collateral and in order to fully consummate all of the transactions contemplated under the Loan Documents.

5. REPRESENTATIONS AND WARRANTIES

Borrower represents and warrants as follows:

5.1 DUE ORGANIZATION; ORGANIZATIONAL STRUCTURE; AUTHORIZATION.

Borrower and each Subsidiary is duly existing and in good standing in its state of formation and qualified and licensed to do business in, and in good standing in, any state in which the conduct of its business or its ownership of property requires that it be qualified, except where the failure to do so could not reasonably be expected to cause a Material Adverse Change.

Borrower has not changed its state of formation or organizational structure or type or any organizational number assigned by its jurisdiction of formation.

The execution, delivery and performance of the Loan Documents have been duly authorized, and do not conflict with Borrower's formation documents, nor constitute an event of default under any material agreement by which Borrower is bound. Borrower is not in default under any agreement to which or by which it is bound in which the default could reasonably be expected to cause a Material Adverse Change.

5.2 PLACES OF BUSINESS; LOCATION OF COLLATERAL.

Except as set forth in the Disclosure Letter, the Equipment and Inventory is not in the possession of any third party bailee (such as at a warehouse, but excluding Equipment or Inventory in the possession of third parties for demonstration or evaluation purposes, or otherwise in the ordinary course of business consistent with past practices). In the event that Borrower, after the date hereof, intends to store or otherwise deliver the Collateral to such a bailee, then Borrower may amend the Disclosure Letter so long as such new location is within the continental United States.

5.3 COLLATERAL.

(a) Borrower has rights in the Collateral and its Intellectual Property sufficient to grant a security interest therein, free of Liens except Permitted Liens. All of Borrower's Deposit Accounts and any existing commercial tort claims are described on the Disclosure Letter. The Accounts are bona fide, existing obligations, and the service or property

5.

has been performed or delivered to the account debtor or its agent for immediate shipment to and unconditional acceptance by the account debtor. All Inventory is in all material respects of good and marketable quality, free from material defects. Borrower is the sole owner of the Intellectual Property, except for

non-exclusive and exclusive licenses granted in the ordinary course of business. Each issued Patent owned by Borrower is valid and enforceable and no part of the Intellectual Property has been judged invalid or unenforceable, in whole or in part, and no claim has been made that any part of the Intellectual Property violates the rights of any third party, except to the extent such claim could not reasonably be expected to cause a Material Adverse Change. None of the Equipment financed by Bank now is or will be affixed to any real property in such a manner, or with such intent, as to become a fixture.

(b) All statements made and all unpaid balances appearing in all invoices, instruments, and other documents evidencing the Accounts are and shall be true and correct. All such invoices, instruments, and other documents, and all of Borrower's Books are and shall be genuine and in all respects are what they purport to be. All sales and other transactions underlying or giving rise to each Account shall comply in all material respects with all applicable laws and governmental rules and regulations. To the best of Borrower's knowledge, all signatures and endorsements on all documents, instruments, and agreements relating to all Accounts are and shall be genuine, and all such documents, instruments, and agreements are and shall be legally enforceable in accordance with their terms.

5.4 LITIGATION.

Except as shown in the Disclosure Letter, there are no actions or proceedings pending or, to the knowledge of Borrower's Responsible Officers, threatened by or against Borrower or any Subsidiary in which a likely adverse decision could reasonably be expected to cause a Material Adverse Change.

5.5 NO MATERIAL ADVERSE CHANGE IN FINANCIAL STATEMENTS.

All consolidated financial statements for Borrower, and any Subsidiary, delivered to Bank fairly present in all material respects Borrower's consolidated financial condition and Borrower's consolidated results of operations. There has not been any material deterioration in Borrower's consolidated financial condition since the date of the most recent financial statements submitted to Bank.

5.6 TAXES.

As of the date hereof, and except as set forth on the Disclosure Letter, Borrower is unaware of any claims or adjustments proposed for any of Borrower's prior tax years which could result in additional taxes becoming due and payable by Borrower.

5.7 SOLVENCY.

The fair salable value of Borrower's assets (including goodwill minus disposition costs) exceeds the fair value of its liabilities; the Borrower's remaining assets after the transactions contemplated herein are not unreasonably small in relation to its business; and Borrower is able to pay its debts (including trade debts) as they mature.

6.

5.8 EXISTING TERM DEBT.

Schedule A accurately reflects the outstanding principal amount of and the payment dates, payment amounts, and maturity dates with respect to the Existing Equipment Debt.

5.9 REGULATORY COMPLIANCE.

Borrower is not an "investment company" or a company "controlled" by an "investment company" under the Investment Company Act. Borrower is not engaged as one of its important activities in extending credit for margin stock (under Regulations T and U of the Federal Reserve Board of Governors). Borrower has complied in all material respects with the Federal Fair Labor Standards Act.

Borrower has not violated any laws, ordinances or rules, the violation of which could reasonably be expected to cause a Material Adverse Change. None of Borrower's or any Subsidiary's properties or assets has been used by Borrower or any Subsidiary or, to the best of Borrower's knowledge, by previous Persons, in disposing, producing, storing, treating, or transporting any hazardous substance other than legally. Borrower and each Subsidiary has timely filed all required tax returns and paid, or made adequate provision to pay, all material taxes, except those being contested in good faith with adequate reserves under GAAP. Borrower and each Subsidiary has obtained all consents, approvals and authorizations of, made all declarations or filings with, and given all notices to, all government authorities that are necessary to continue its business as currently conducted, except where the failure to do so could not reasonably be expected to cause a Material Adverse Change.

5.10 SUBSIDIARIES.

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

5.11 FULL DISCLOSURE.

No written representation, warranty or other statement of Borrower in any certificate or written statement given to Bank (taken together with all such written certificates and written statements to Bank) contains any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained in the certificates or statements not misleading (it being recognized by Bank that the projections and forecasts provided by Borrower in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ from the projected and forecasted results).

6. AFFIRMATIVE COVENANTS

Borrower will do all of the following for so long as Bank has an obligation to lend, or there are outstanding Obligations:

7.

6.1 GOVERNMENT COMPLIANCE.

Subject to Section 7.3, Borrower will maintain its and all Subsidiaries' legal existence and good standing in its jurisdiction of formation and maintain qualification in each jurisdiction in which the failure to so qualify would reasonably be expected to cause a material adverse effect on Borrower's business or operations. Borrower will comply, and have each Subsidiary comply, with all laws, ordinances and regulations to which it is subject, noncompliance with which could have a material adverse effect on Borrower's business or operations or would reasonably be expected to cause a Material Adverse Change.

6.2 FINANCIAL STATEMENTS, REPORTS, CERTIFICATES.

(a) Borrower will deliver to Bank: (i) as soon as available, but no later than 45 days after the last day of each quarter, a company prepared consolidated balance sheet and income statement covering Borrower's consolidated operations during the period certified by a Responsible Officer and in a form acceptable to Bank; (ii) as soon as available, but no later than 120 days after the last day of Borrower's fiscal year, audited consolidated financial statements prepared under GAAP, consistently applied, together with an opinion on the financial statements from an independent certified public accounting firm reasonably acceptable to Bank; (iii) annual financial projections in form and substance commensurate with those provided to Borrower's board of directors or utilized by Borrower's executive management, in form and substance satisfactory to Bank; (iv) within 5 days of filing, copies of all statements, reports and notices made available to Borrower's security holders or to any holders of Subordinated Debt and all reports on Form 10-K, 10-Q and 8-K filed with the Securities and Exchange Commission (the "SEC")

(other than those reports on Form 10-K, 10-Q or 8-K (relating to certification) that are otherwise publicly available through the SEC's EDGAR system); (v) a prompt report of any claim, proceeding, litigation, or investigation in the future threatened or instituted against Borrower which would reasonably be expected to result in damages to Borrower of \$500,000 or more, exclusive of litigation the potential liability in connection with which is fully insured against; and (vi) budgets, sales projections, operating plans or other financial information Bank reasonably requests.

(b) Within 45 days after the last day of each quarter, Borrower will deliver to Bank with the quarterly financial statements a Compliance Certificate.

(c) Borrower will allow Bank to audit Borrower's Collateral at Borrower's expense, and the charge therefor shall be \$750 per person per day (or such higher amount as shall represent Bank's then current standard charge for the same), plus reasonable out-of-pocket expenses. In the event Borrower and Bank schedule and audit more than 10 days in advance, and Borrower seeks to reschedule the audit with less than 10 days written notice to Bank, then (without limiting any of Bank's rights and remedies) Borrower shall pay Bank a cancellation fee of \$1,000 plus any out-of-pocket expenses incurred by Bank to compensate Bank for the anticipated costs and expenses of cancellation. The results of audits will be satisfactory to Bank, and audits will be conducted no more often than once every year unless an Event of Default shall have occurred.

8.

6.3 INVENTORY; RETURNS.

Borrower will keep all Inventory in good and marketable condition, free from material defects. Returns and allowances between Borrower and its account debtors will follow Borrower's customary practices as they exist at execution of this Agreement. Borrower must promptly notify Bank of all returns, recoveries, disputes and claims that occur after the occurrence and during the continuance of an Event of Default.

6.4 COLLATERAL.

(a) Borrower will give Bank at least 30 days prior written notice before opening any additional place of business, changing its chief executive office, or moving any of the Equipment or Inventory (but excluding Equipment or Inventory in the possession of third parties for documentation or evaluation purposes, or otherwise in the ordinary course of business consistent with past practices) to a location other than Borrower's address set forth in the preamble hereof or in the Disclosure Letter, except that Borrower may maintain sales offices in the ordinary course of business at which not more than a total of \$10,000 fair market value of Equipment is located.

(b) In the event that Borrower shall at any time after the date hereof have any commercial tort claims against others, which it is asserting or intends to assert, and in which the likely recovery exceeds \$1,000,000, Borrower shall promptly notify Bank thereof in writing and provide Bank with such information regarding the same as Bank shall request (unless providing such information would waive Borrower's attorney-client privilege). Such notification to Bank shall constitute a grant of a security interest in the commercial tort claim and all proceeds thereof to Bank, and Borrower shall execute and deliver all such documents and take all such actions as Bank shall request in connection therewith.

6.5 TAXES; PENSION CONTRIBUTIONS.

Borrower will make, and cause each Subsidiary to make, timely payment of all material federal, state, and local taxes or assessments and will deliver to Bank, on demand, appropriate certificates attesting to the payment. Notwithstanding the foregoing, Borrower may defer payment of any contested

taxes, provided that Borrower (a) in good faith contests its obligations to pay the taxes by appropriate proceedings promptly and diligently instituted and conducted, (b) notifies Bank in writing of the commencement of, and any material development in, any such proceedings involving more than \$500,000, and (c) posts bonds or takes other steps required to keep the contested taxes from becoming a lien upon any of the Collateral. Borrower has paid, and shall continue to pay all amounts necessary to fund all present and future pension, profit sharing, and deferred compensation plans in accordance with their terms, and Borrower has not and will not withdraw from participation in, permit partial or complete termination of, or permit the occurrence of any other event with respect to, any such plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

6.6 INSURANCE.

Borrower will keep its business and the Collateral insured for risks and in amounts

9.

standard for Borrower's industry, and as Bank may reasonably request. Insurance policies will be in a form, with companies, and in amounts that are satisfactory to Bank in Bank's reasonable discretion. All property policies will have a lender's loss payable endorsement showing Bank as an additional loss payee and all liability policies will show the Bank as an additional insured and provide that the insurer must give Bank at least 20 days notice before canceling its policy. At Bank's request, Borrower will deliver certified copies of policies and evidence of all premium payments. Proceeds payable under any policy will, at Bank's option if an Event of Default has occurred and is continuing, be payable to Bank on account of the Obligations. Bank shall release to Borrower, so long as no Event of Default is reasonably likely to occur as a result of such release by Bank, insurance proceeds with respect to Equipment which proceeds shall be utilized by Borrower for the replacement of the Equipment with respect to which the insurance proceeds were paid. Bank may require reasonable assurance that the insurance proceeds were utilized by Borrower for such purpose.

6.7 FINANCIAL COVENANT.

At all times, Borrower shall have unrestricted cash and cash equivalents (net of Credit Extensions) of no less than \$65,000,000.

6.8 REGISTRATION OF INTELLECTUAL PROPERTY RIGHTS.

Borrower will (a) protect, defend and maintain the validity and enforceability of the Intellectual Property and promptly advise Bank in writing of material infringements, (b) not allow any Intellectual Property material to Borrower's business to be abandoned, forfeited or dedicated to the public without Bank's written consent, (c) concurrently with the filing of any Patent or Trademark with the United States Patent and Trademark Office, any Copyright with the United States Copyright Office, or any similar office or agency in any other country or any political subdivision thereof, by either itself or through any agent, employee, licensee or designee, promptly inform Bank (if any such additional Patents, Trademarks, and/or Copyrights are not otherwise disclosed in Borrower's public filings with the SEC), and, upon request of Bank, execute and deliver any and all agreements, instruments, documents, and papers as Bank may request to evidence Bank's security interest in such Copyright, Patent or Trademark, including, with respect to Trademarks, the goodwill of Borrower, relating thereto or represented thereby.

6.9 PAYMENT OF EXISTING TERM DEBT.

Borrower shall pay the Existing Term Debt in accordance with the amortization schedule set forth on Schedule A.

6.10 USE OF PROCEEDS.

Borrower shall use the Advances (including Advances constituting Letters of Credit) only for its general working capital requirements. Borrower shall use the Equipment Advances only to purchase Equipment.

10.

6.11 PRIMARY ACCOUNTS.

Borrower shall maintain its primary operating accounts with Bank.

6.12 ACCOUNT CONTROL AGREEMENTS.

Borrower shall provide five (5) Business Days written notice to Bank before establishing any new deposit account or securities account and shall deliver to Bank a Control Agreement within 30 days after the opening any such account.

6.13 FURTHER ASSURANCES.

Borrower will execute any further instruments and take further action as Bank reasonably requests to perfect or continue Bank's security interest in the Collateral or to effect the purposes of this Agreement.

7. NEGATIVE COVENANTS

Borrower will not do any of the following without Bank's prior written consent for so long as Bank has an obligation to lend or there are any outstanding Obligations (other than inchoate indemnity obligations):

7.1 DISPOSITIONS.

Convey, sell, lease, transfer or otherwise dispose of (collectively "TRANSFER"), or permit any of its Subsidiaries to Transfer, all or any part of its business or property, except for Transfers of (a) Inventory in the ordinary course of business; (b) non-exclusive licenses and exclusive licenses limited to a geographic range or field of use and similar arrangements (such as source code escrow arrangements) for the use of the property of Borrower or its Subsidiaries in the ordinary course of business; (c) worn-out, surplus, or obsolete Equipment in good faith in an arm's-length transaction; (d) Accounts where Adelphia Communications and/or its Subsidiaries are the account debtor(s) and claims in the bankruptcy proceedings of Adelphia Communications and/or its Subsidiaries related to such Accounts, such Accounts and claims in an aggregate amount not to exceed \$3,000,000, to Satellite Asset Management or to such other purchaser in good faith in an arm's-length transaction; or (e) cash or cash equivalents so long as Borrower is in compliance with Section 6.7.

7.2 CHANGES IN BUSINESS, OWNERSHIP, OR STATE OF INCORPORATION.

Engage in or permit any of its Subsidiaries to engage in any business other than the businesses currently engaged in by Borrower or reasonably related thereto or have a Change in Control. Borrower will not, without at least 30 days prior written notice to Bank, change its state of incorporation.

7.3 MERGERS OR ACQUISITIONS.

Merge or consolidate, or permit any of its Subsidiaries to merge or consolidate, with any other Person, or acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the

11.

capital stock or property of another Person, except where (a) no Event of Default has occurred and is continuing or would result from such action during the term of this Agreement, (b) Borrower is the sole surviving entity, and (c) such transactions do not result in a decrease of more than 25% Tangible Net Worth.

7.4 INDEBTEDNESS.

Create, incur, assume, or be liable for any Indebtedness, or permit any Subsidiary to do so, other than Permitted Indebtedness.

7.5 ENCUMBRANCE.

Create, incur, or allow any Lien on any of its property (including its Intellectual Property), or assign or convey any right to receive income, including the sale of any Accounts (except as permitted by Section 7.1), or permit any of its Subsidiaries to do so, except for Permitted Liens, or permit any Collateral not to be subject to the first priority security interest granted hereunder.

7.6 DISTRIBUTIONS; INVESTMENTS.

Directly or indirectly acquire or own any Person, or make any Investment in any Person, other than Permitted Investments or as permitted by Section 7.3, or permit any of its Subsidiaries to do so. Pay any dividends (other than dividends payable solely in capital stock) or make any distribution or payment or redeem, retire or purchase any capital stock except for (a) repurchases of stock from former employees or directors of Borrower under the terms of applicable repurchase agreements, provided that no Event of Default has occurred, is continuing or would exist after giving effect to the repurchases, and (b) the conversion of any convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange therefore, and payments in cash for any fractional shares of such convertible securities.

7.7 TRANSACTIONS WITH AFFILIATES.

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

7.8 SUBORDINATED DEBT.

Make or permit any payment on any Subordinated Debt, except under the terms of the Subordinated Debt, or amend any provision in any document relating to the Subordinated Debt without Bank's prior written consent.

7.9 COMPLIANCE.

Become an "investment company" or a company controlled by an "investment company," under the Investment Company Act of 1940 or undertake as one of its important activities extending credit to purchase or carry margin stock, or use the proceeds of any Advance

12.

for that purpose; fail to meet the minimum funding requirements of ERISA, permit a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; fail to comply with the Federal Fair Labor Standards Act or violate any other law or regulation, if the violation could reasonably be expected to have a material adverse effect on Borrower's business or operations or would reasonably be expected to cause a Material Adverse Change, or permit any of its Subsidiaries to do so.

8. EVENTS OF DEFAULT

Any one of the following is an Event of Default:

8.1 PAYMENT DEFAULT.

If Borrower fails to pay any of the Obligations within three (3) Business Days of their due date;

8.2 COVENANT DEFAULT.

If Borrower does not perform any obligation in Section 6 or violates any covenant in Section 7;

8.3 MATERIAL ADVERSE CHANGE.

If there (a) occurs a material adverse change in the business, operations, or condition (financial or otherwise) of the Borrower, (b) is a material impairment of the prospect of repayment of any portion of the Obligations or (c) is a material impairment of the value or priority of Bank's security interests in the Collateral;

8.4 ATTACHMENT.

If any material portion of Borrower's assets is attached, seized, levied on, or comes into possession of a trustee or receiver and the attachment, seizure or levy is not removed in 10 days, or if Borrower is enjoined, restrained, or prevented by court order from conducting a material part of its business or if a judgment or other claim becomes a Lien on a material portion of Borrower's assets, or if a notice of lien, levy, or assessment is filed against any of Borrower's assets by any government agency and not paid within 10 days after Borrower receives notice. These are not Events of Default if stayed or if a bond is posted pending contest by Borrower (but no Advances will be made during the cure period);

8.5 INSOLVENCY.

If Borrower becomes insolvent or if Borrower begins an Insolvency Proceeding or an Insolvency Proceeding is begun against Borrower and not dismissed or stayed within 45 days (but no Advances will be made before any Insolvency Proceeding is dismissed);

8.6 OTHER AGREEMENTS.

If there is a default in any agreement between Borrower or a third party that gives the

13.

third party the right to accelerate an Indebtedness exceeding \$1,000,000 or that could cause or result in a Material Adverse Change;

8.7 JUDGMENTS.

If money judgments in excess of \$1,000,000 are rendered against Borrower and unsatisfied and unstayed for 10 days (but no Advances will be made before the judgment is stayed or satisfied);

8.8 MISREPRESENTATIONS.

If Borrower or any Person acting for Borrower makes any material misrepresentation or material misstatement now or later in any warranty or representation in this Agreement or in any writing delivered to Bank or to induce Bank to enter this Agreement or any Loan Document; or

9. BANK'S RIGHTS AND REMEDIES

9.1 RIGHTS AND REMEDIES.

When an Event of Default occurs and continues Bank may, without notice or demand, do any or all of the following:

- (a) Declare all Obligations immediately due and

payable (but if an Event of Default described in Section 8.5 occurs all Obligations are immediately due and payable without any action by Bank);

(b) Stop advancing money or extending credit for Borrower's benefit under this Agreement or under any other agreement between Borrower and Bank;

(c) Settle or adjust disputes and claims directly with account debtors for amounts, on terms and in any order that Bank considers advisable;

(d) Make any payments and do any acts it considers necessary or reasonable to protect its security interest in the Collateral. Borrower will assemble the Collateral if Bank requires and make it available as Bank designates. Bank may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien which appears to be prior or superior to its security interest and pay all expenses incurred. Borrower grants Bank a license to enter and occupy any of its premises, without charge, to exercise any of Bank's rights or remedies;

(e) Apply to the Obligations any (i) balances and deposits of Borrower it holds, or (ii) any amount held by Bank owing to or for the credit or the account of Borrower;

(f) Ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell the Collateral. Bank is granted a non-exclusive, royalty-free license or other right to use, without charge, Borrower's labels, Patents, Copyrights, Mask Works, rights of use of any name, trade secrets, trade names, Trademarks, service marks, and advertising matter, or any similar property as it pertains to the Collateral, in completing

14.

production of, advertising for sale, and selling any Collateral and, in connection with Bank's exercise of its rights under this Section, Borrower's rights under all licenses and all franchise agreements inure to Bank's benefit; and

(g) Dispose of the Collateral according to the Code.

9.2 POWER OF ATTORNEY.

Effective only when an Event of Default occurs and continues, Borrower irrevocably appoints Bank as its lawful attorney to: (a) endorse Borrower's name on any checks or other forms of payment or security; (b) sign Borrower's name on any invoice or bill of lading for any Account or drafts against account debtors, (c) make, settle, and adjust all claims under Borrower's insurance policies; (d) settle and adjust disputes and claims about the Accounts directly with account debtors, for amounts and on terms Bank determines reasonable; and (e) transfer the Collateral into the name of Bank or a third party as the Code permits. Bank may exercise the power of attorney to sign Borrower's name on any documents necessary to perfect or continue the perfection of any security interest regardless of whether an Event of Default has occurred. Bank's appointment as Borrower's attorney in fact, and all of Bank's rights and powers, coupled with an interest, are irrevocable until all Obligations have been fully repaid and performed and Bank's obligation to provide Credit Extensions terminates.

9.3 ACCOUNTS COLLECTION.

When an Event of Default occurs and continues, (a) Bank may notify any Person owing Borrower money of Bank's security interest in the funds and verify the amount of the Account, and (b) Borrower must collect all payments in trust for Bank and, if requested by Bank, immediately deliver the payments to Bank in the form received from the account debtor, with proper endorsements for deposit.

9.4 BANK EXPENSES.

If Borrower fails to pay any amount or furnish any required proof of payment to third persons, Bank may make all or part of the payment or obtain insurance policies required in Section 6.6, and take any action under the policies Bank deems prudent. Any amounts paid by Bank are Bank Expenses and immediately due and payable, bearing interest at the then applicable rate and secured by the Collateral. No payments by Bank are deemed an agreement to make similar payments in the future or Bank's waiver of any Event of Default.

9.5 BANK'S LIABILITY FOR COLLATERAL.

If Bank complies with reasonable banking practices and the Code, it is not liable for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other person. Borrower bears all risk of loss, damage or destruction of the Collateral.

9.6 REMEDIES CUMULATIVE.

Bank's rights and remedies under this Agreement, the Loan Documents, and all other

15.

agreements are cumulative. Bank has all rights and remedies provided under the Code, by law, or in equity. Bank's exercise of one right or remedy is not an election, and Bank's waiver of any Event of Default is not a continuing waiver. Bank's delay is not a waiver, election, or acquiescence. No waiver is effective unless signed by Bank and then is only effective for the specific instance and purpose for which it was given.

9.7 DEMAND WAIVER.

Borrower waives demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by Bank on which Borrower is liable.

10. NOTICES

All notices or demands by any party about this Agreement or any other related agreement must be in writing and be personally delivered or sent by an overnight delivery service, by certified mail, postage prepaid, return receipt requested, or by facsimile to the addresses set forth at the beginning of this Agreement. A party may change its notice address by giving the other party written notice.

11. CHOICE OF LAW , VENUE AND JURY TRIAL WAIVER

California law governs the Loan Documents without regard to principles of conflicts of law. Borrower and Bank each submit to the exclusive jurisdiction of the State and Federal courts in Santa Clara County, California.

BORROWER AND BANK EACH WAIVE THEIR RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF ANY OF THE LOAN DOCUMENTS OR ANY CONTEMPLATED TRANSACTION, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR BOTH PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

12. GENERAL PROVISIONS

12.1 SUCCESSORS AND ASSIGNS.

This Agreement binds and is for the benefit of the successors and

permitted assigns of each party. Borrower may not assign this Agreement or any rights under it without Bank's prior written consent which may be granted or withheld in Bank's discretion. Bank has the right, without the consent of or notice to Borrower, to sell, transfer, negotiate, or grant participation in all or any part of, or any interest in, Bank's obligations, rights and benefits under this Agreement.

12.2 INDEMNIFICATION.

Borrower will indemnify, defend and hold harmless Bank and its officers, employees,

16.

and agents against: (a) all obligations, demands, claims, and liabilities asserted by any other party in connection with the transactions contemplated by the Loan Documents; and (b) all losses or Bank Expenses incurred, or paid by Bank from, following, or consequential to transactions between Bank and Borrower (including reasonable attorneys' fees and expenses), except with respect to (a) and (b) above, for obligations, demands, claims, liabilities or losses caused by Bank's gross negligence or willful misconduct.

12.3 TIME OF ESSENCE.

Time is of the essence for the performance of all obligations in this Agreement.

12.4 SEVERABILITY OF PROVISIONS.

Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

12.5 AMENDMENTS IN WRITING; INTEGRATION.

All amendments to this Agreement must be in writing and signed by Borrower and Bank. This Agreement represents the entire agreement about this subject matter, and supersedes prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of this Agreement merge into this Agreement and the Loan Documents.

12.6 COUNTERPARTS.

This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, are an original, and all taken together, constitute one Agreement.

12.7 SURVIVAL.

All covenants, representations and warranties made in this Agreement continue in full force while any Obligations remain outstanding. The obligations of Borrower in Section 12.2 to indemnify Bank will survive until all statutes of limitations for actions that may be brought against Bank have run.

12.8 CONFIDENTIALITY.

In handling any confidential information, Bank will exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made (a) to Bank's subsidiaries or affiliates in connection with their business with Borrower, (b) to prospective transferees or purchasers of any interest in the loans (provided, however, Bank shall use commercially reasonable efforts in obtaining such prospective transferee or purchasers agreement of the terms of this provision), (c) as required by law, regulation, subpoena, or other order, (d) as required in connection with Bank's examination or audit, and (e) as Bank considers appropriate exercising remedies under this Agreement. Confidential information includes information that is not either: (x) in the public domain or already in Bank's possession before

disclosed to Bank by Borrower, or becomes part of the public domain after disclosure to Bank; or (y) disclosed to Bank by a third party, if Bank does not know that the third party is prohibited from disclosing the information.

12.9 ATTORNEYS' FEES, COSTS AND EXPENSES.

In any action or proceeding between Borrower and Bank arising out of the Loan Documents, the prevailing party will be entitled to recover its reasonable attorneys' fees and other reasonable costs and expenses incurred, in addition to any other relief to which it may be entitled.

13. DEFINITIONS

In this Agreement:

"ACCOUNTS" are all existing and later arising accounts, contract rights, and other obligations owed Borrower in connection with its sale or lease of goods (including licensing software and other technology) or provision of services, all credit insurance, guaranties, other security and all merchandise returned or reclaimed by Borrower and Borrower's Books relating to any of the foregoing.

"ADVANCE" or "ADVANCES" is a loan advance (or advances) under the Committed Revolving Line, including Advances used to issue or fund Letters of Credit.

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

"BANK EXPENSES" are all audit fees and expenses and reasonable costs and expenses (including reasonable attorneys' fees and expenses) for preparing, negotiating, administering, defending and enforcing the Loan Documents (including appeals or Insolvency Proceedings).

"BORROWER'S BOOKS" are all Borrower's books and records including ledgers, records regarding Borrower's assets or liabilities, the Collateral, business operations or financial condition and all computer programs or discs or any equipment containing the information.

"BUSINESS DAY" is any day that is not a Saturday, Sunday or a day on which the Bank is closed.

"CHANGE IN CONTROL" is a transaction in which any "PERSON" or "GROUP" (within the meaning of Section 13(d) and 14(d)(2) of the Securities Exchange Act of 1934) becomes the "BENEFICIAL OWNER" (as defined in Rule 13d-3 under the Securities Exchange Act of 1934), directly or indirectly, of a sufficient number of shares of all classes of stock then outstanding of Borrower ordinarily entitled to vote in the election of directors, empowering such "PERSON" or "GROUP" to elect a majority of the board of directors of Borrower, who did not have such power before such transaction.

"CLOSING DATE" is the date of this Agreement.

"CODE" is the Uniform Commercial Code in effect in any applicable jurisdiction.

"COLLATERAL" is the property described on Exhibit A.

"COMMITTED EQUIPMENT LINE" is an Equipment Advance or Equipment Advances of up to the aggregate principal amount of \$2,044,597.84.

"COMMITTED REVOLVING LINE" is an Advance or Advances of up to the aggregate principal amount of \$10,000,000.

"COMPLIANCE CERTIFICATE" is a Compliance Certificate signed by a Responsible Officer in substantially the same form of Exhibit C attached hereto.

"CONTINGENT OBLIGATION" is, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another such as an obligation directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligations for undrawn letters of credit for the account of that Person; and (c) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices; but "CONTINGENT OBLIGATION" does not include endorsements in the ordinary course of business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under the guarantee or other support arrangement.

"CONTROL AGREEMENT" is an account control agreement, in form and substance satisfactory to Bank, executed and delivered by Borrower, Bank and all applicable depository institutions, with respect to Borrower's deposit or operating accounts, or all applicable securities intermediaries, with respect to Borrower's securities accounts.

"COPYRIGHTS" are all copyright rights, applications or registrations and like protections in each work or authorship or derivative work, whether published or not (whether or not it is a trade secret) now or later existing, created, acquired or held.

"CREDIT EXTENSION" is each Advance, Equipment Advance, Letter of Credit, the Existing Equipment Debt or any other extension of credit by Bank for Borrower's benefit.

"DEPOSIT ACCOUNTS" means all present and future "deposit account" as defined in the California Uniform Commercial Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes, without limitation, all general and special bank accounts, demand accounts, checking accounts, savings accounts, and certificates of deposit.

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

19.

"EQUIPMENT ADVANCE" is defined in Section 2.2(a).

"EQUIPMENT AVAILABILITY END DATE" is defined in Section 2.2(a).

"EQUIPMENT MATURITY DATE" is with respect to each Equipment Advance, the last day of the Repayment Period for such Equipment Advance, or if earlier, the date of acceleration of such Equipment Advance by Bank following an Event of Default.

"EXISTING EQUIPMENT DEBT" is defined in Section 2.2(d).

"ERISA" is the Employment Retirement Income Security Act of 1974, and its regulations.

"FOREIGN SUBSIDIARY" is any Subsidiary of Borrower that is organized under the laws of any jurisdiction outside of the United States.

"GAAP" is generally accepted accounting principles.

"GENERAL INTANGIBLES" means all present and future "general intangibles" as defined in the California Uniform Commercial Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes, without limitation, all Intellectual Property, payment intangibles, royalties, contract rights, goodwill, franchise agreements, purchase orders, customer lists, route lists, telephone numbers, domain names, claims, income tax refunds, security and other deposits, options to purchase or sell real or personal property, rights in all litigation presently or hereafter pending (whether in contract, tort, or otherwise), insurance policies (including, without limitation, key man, property damage, and business interruption insurance), payments of insurance and rights to payment of any kind.

"GUARANTOR" is any present or future guarantor of the Obligations.

"INDEBTEDNESS" is (a) indebtedness for borrowed money or the deferred price of property or services, such as reimbursement and other obligations for surety bonds and letters of credit, (b) obligations evidenced by notes, bonds, debentures or similar instruments, (c) capital lease obligations and (d) Contingent Obligations.

"INSOLVENCY PROCEEDING" are proceedings by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

"INTELLECTUAL PROPERTY" is:

(a) Copyrights, Trademarks, Patents, and Mask Works including amendments, renewals, extensions, and all licenses or other rights to use and all license fees and royalties from the use;

(b) Any trade secrets and any intellectual property rights in computer software and computer software products now or later existing, created, acquired or held; and

20.

(c) All design rights which may be available to Borrower now or later created, acquired or held.

"INVENTORY" is present and future inventory in which Borrower has any interest, including merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products intended for sale or lease or to be furnished under a contract of service, of every kind and description now or later owned by or in the custody or possession, actual or constructive, of Borrower, including inventory temporarily out of its custody or possession or in transit and including returns on any accounts or other proceeds (including insurance proceeds) from the sale or disposition of any of the foregoing and any documents of title.

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

"INVESTMENT PROPERTY" means all present and future investment property, securities, stocks, bonds, debentures, debt securities, partnership interests, limited liability company interests, options, security entitlements, securities accounts, commodity contracts, commodity accounts, and all financial assets held in any securities account or otherwise, and all option and warrants to purchase any of the foregoing, wherever located, and all other securities of every kind, whether certificated or uncertificated.

"LETTER OF CREDIT" is defined in Section 2.1.2.

"LETTER OF CREDIT FEES" is defined in Section 2.1.2.

"LIEN" is a mortgage, lien, deed of trust, charge, pledge, security interest or other encumbrance.

"LOAN DOCUMENTS" are, collectively, this Agreement, any note, or notes or guaranties executed by Borrower or Guarantor, any account control agreements, and any other present or future agreement between Borrower or for the benefit of Bank in connection with this Agreement, all as amended, extended or restated.

"MASK WORKS" are all mask works or similar rights available for the protection of semiconductor chips, now owned or later acquired.

"MATERIAL ADVERSE CHANGE" is described in Section 8.3.

"MATURITY DATE" is December 18, 2004.

"OBLIGATIONS" are debts, principal, interest, Bank Expenses and other amounts Borrower owes Bank now or later, including cash management services, letters of credit and foreign exchange contracts, if any and including interest accruing after Insolvency Proceedings begin and debts, liabilities, or obligations of Borrower assigned to Bank.

"OTHER PROPERTY" means the following as defined in the California Uniform Commercial Code in effect on the date hereof with such additions to such term as may hereafter be made, and all rights relating thereto: all present and future "commercial tort claims" (including, without

21.

limitation, any commercial tort claims identified pursuant to Sections 5.3 or 6.4(b)), "documents", "instruments", "promissory notes", "chattel paper", "letters of credit", "letter-of-credit rights", "fixtures", "farm products", and "money"; and all other goods and personal property of every kind, tangible and intangible, whether or not governed by the California Uniform Commercial Code.

"PATENTS" are patents, patent applications and like protections, including improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same.

"PERMITTED INDEBTEDNESS" is:

- (a) Borrower's Obligations;
- (b) Indebtedness existing on the Closing Date and shown on the Disclosure Letter;
- (c) Subordinated Debt;
- (d) Indebtedness of Borrower to any Subsidiary of Borrower and of Subsidiaries to any other Subsidiary or to Borrower;
- (e) Indebtedness to trade creditors incurred in the ordinary course of business;
- (f) Indebtedness to financial institutions other than Bank in connection with obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect Borrower against fluctuation in interest rates, currency exchange rates or commodity prices so long as such Indebtedness does not to exceed \$10,000,000;
- (g) Indebtedness secured by Permitted Liens;

(h) Indebtedness of any Person existing at the time such Person is merged with or into Borrower or becomes a Subsidiary as permitted hereby, provided that such Indebtedness is not incurred in connection with, or in contemplation of, such Person merging with and into the Borrower or becoming a Subsidiary of the Borrower; and

(i) Indebtedness with respect to surety, appeal, indemnity, performance or other similar bonds incurred in the ordinary course of business, consistent with past practices.

"PERMITTED INVESTMENTS" are:

(a) Investments shown on the Disclosure Letter and existing on the Closing Date;

(b) (i) marketable direct obligations issued or unconditionally guaranteed by the United States of America or any agency or any State thereof maturing within

22.

one (1) year from the date of acquisition thereof, (ii) commercial paper maturing no more than one (1) year from the date of creation thereof and currently having rating of at least A-2 or P-2 from either Standard & Poor's Corporation or Moody's Investors Service, Inc., (iii) certificates of deposit maturing no more than one (1) year from the date of investment therein issued by Bank, and (iv) future Investments in similar types of Investments pursuant to Borrower's investment policy (attached hereto as Schedule B) that has been formally adopted or otherwise approved by Borrower's Board of Directors;

(c) Investments accepted in connection with Transfers permitted by Section 7.1;

(d) Investments in connection with the acquisition of any part of the capital stock or property of another Person so long as (i) no Event of Default has occurred and is continuing or would result from such action during the term of this Agreement, (ii) Borrower is in compliance with Section 7.3 hereof, and (iii) such transactions do not result in a decrease of more than 25% Tangible Net Worth;

(e) Investments consisting of (i) travel advances, employee relocation loans and other employee loans and advances in the ordinary course of business not to exceed \$1,000,000 and (ii) non-cash loans to employees, officers or directors relating to the purchase of equity securities of Borrower pursuant to employee stock purchase plans or arrangements approved by Borrower's board of directors;

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

(g) Investments consisting of notes receivable or, prepaid royalties and other credit obligations to customers and suppliers who are not Affiliates, in the ordinary course of business.

(h) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of Borrower;

(i) Investments of Subsidiaries in or to other Subsidiaries or Borrower and Investments by Borrower in Subsidiaries; and

(j) Joint ventures or strategic alliances in the ordinary course of Borrower's business consisting of the non-exclusive licensing of technology, the development of technology or the providing of technical support, provided that (i) any cash investments by Borrower do not exceed

\$5,000,000 in the aggregate in any fiscal year, and (ii) Borrower remains in compliance with Section 6.7 hereof.

"PERMITTED LIENS" are:

(a) Liens existing on the Closing Date and shown on the Disclosure Letter or arising under this Agreement or other Loan Documents;

23.

(b) Liens for taxes, fees, assessments or other government charges or levies, either not delinquent or being contested in good faith and for which Borrower maintains adequate reserves on its Books, if they have no priority over any of Bank's security interests;

(c) Purchase money Liens (i) on Equipment acquired or held by Borrower or its Subsidiaries incurred for financing the acquisition of the Equipment, or (ii) existing on equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the equipment;

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

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

(f) Liens in favor of other financial institutions arising in connection with Borrower's deposit accounts or securities accounts held at such institutions, provided that Bank has a first priority perfected security interest in such accounts and in the amounts and securities held therein;

(g) Liens in connection with surety or appeals bonds or letters of credit securing such bonds or reimbursement obligations in connection with statutory obligations, bids, tenders, or otherwise in the ordinary course of business provided all such Liens in the aggregate could not (even if enforced) reasonably be likely cause or result in an Event of Default;

(h) Leases or subleases granted in the ordinary course of Borrower's business, including in connection with Borrower's leased premises or leased property;

(i) Additional Liens consented to in writing by Bank which consent may be withheld in Bank's good faith business judgment;

(j) Licenses or sublicenses granted in the ordinary course of Borrower's business and any interest or title of a licensor or under any license or sublicense;

(k) Other Liens not described above arising in the ordinary course of business and not having or not reasonably likely to have a material adverse effect on Borrower's and its Subsidiaries' business or operations taken as a whole or would reasonably be expected to cause or result in a Material Adverse Change; and

(l) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in (a) through (c), but any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase.

Bank shall have the right to require, as a condition to its consent under clause (i) above, that the holder of the additional Lien sign an intercreditor agreement, in favor of Bank in form and substance satisfactory to

Bank in its sole discretion, to acknowledge that the holder's Lien is subordinate to the Lien in favor of Bank and agree not to take any action to enforce its

24.

subordinate Lien so long as any of the Obligations remain outstanding, and that Borrower agree that any uncured default in any obligation secured by the subordinate Lien shall also constitute an Event of Default under this Agreement.

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

"PRIME RATE" is Bank's most recently announced "prime rate," even if it is not Bank's lowest rate, and, in any event, shall not be less than four percent (4.00%) per annum.

"REPAYMENT PERIOD" as to each Equipment Advance, is 36 months.

"RESPONSIBLE OFFICER" is each of the Chief Executive Officer, the President, the Chief Financial Officer and the Controller of Borrower.

"SUBORDINATED DEBT" is debt incurred by Borrower subordinated to Borrower's indebtedness owed to Bank and which is reflected in a written agreement in a manner and form acceptable to Bank and approved by Bank in writing.

"SUBSIDIARY" is for any Person, or any other business entity of which more than 50% of the voting stock or other equity interests is owned or controlled, directly or indirectly, by the Person or one or more Affiliates of the Person.

"TANGIBLE NET WORTH" is, on any date, the consolidated total assets of Borrower and its Subsidiaries minus, (i) any amounts attributable to (a) goodwill, (b) intangible items such as unamortized debt discount and expense, Patents, trade and service marks and names, Copyrights and research and development expenses except prepaid expenses, and (c) reserves not already deducted from assets, and (ii) Total Liabilities.

"TOTAL LIABILITIES" is on any day, obligations that should, under GAAP, be classified as liabilities on Borrower's consolidated balance sheet, including all Indebtedness and the current portion Subordinated Debt allowed to be paid, but excluding all other Subordinated Debt.

"TRADEMARKS" are trademark and servicemark rights, registered or not, applications to register and registrations and like protections, and the entire goodwill of the business of Assignor connected with the trademarks.

"TRANSFER" is defined in Section 7.1.

[The signature page follows.]

25.

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

BORROWER:

HARMONIC INC.

By: /s/ Robin N. Dickson

Printed Name: ROBIN N. DICKSON

Title: CFO

BANK:

SILICON VALLEY BANK

By: /s/ Arman Zand

Printed Name: ARMAN ZAND

Title: V.P

EXHIBIT A

The Collateral consists of all of Borrower's right, title and interest in and to the following, whether now owned or hereafter existing:

all Accounts;

all Inventory;

all Equipment;

all Deposit Accounts;

all General Intangibles (including, without limitation, all Intellectual Property);

all Investment Property;

all Other Property;

and any and all claims, rights, and interests in any of the above, and all guaranties and security for any of the above, and all substitutions and replacements for, additions, accessions, attachments, accessories, and improvements to and proceeds (including proceeds of any insurance policies, proceeds of proceeds and claims against third parties) of, any and all of the above; and

all Borrower's Books relating to the foregoing.

Notwithstanding the foregoing, the security interest granted herein shall not extend to and the term "Collateral" shall not include (a) any license or contract rights to the extent (i) the granting of a security interest in it would be contrary to applicable law, or (ii) that such rights are nonassignable by their terms (but only to the extent such prohibition is enforceable under applicable law) without the consent of the licensor or other party (but only to the extent such consent has not been obtained); (b) that portion (if any) of the capital stock (or other equity interests) of such Foreign Subsidiary owned by Borrower that is in excess of 65% of the aggregate issued and outstanding capital stock (or other equity interests) of such Foreign Subsidiary; and (c) and any property that is subject to a Lien that is otherwise permitted pursuant to clause (c) of the definition of "Permitted Liens" and Bank agrees to execute any instruments or documents necessary to release its interest in such property and to effect the foregoing.

EXHIBIT B

LOAN PAYMENT/ADVANCE REQUEST FORM

DEADLINE FOR SAME DAY PROCESSING IS 12:00 NOON PACIFIC TIME

FAX TO: _____

Date: _____

BORROWER: _____

[] LOAN PAYMENT:

From Account # _____ To Account # _____
(Name and Deposit Account #) (Loan Account #)

Principal \$ _____ and/or Interest \$ _____

Borrower's representations and warranties in the Loan and Security Agreement are true, correct and complete in all material respects on and as of the date hereof, but those representations and warranties expressly referring to another date shall be true, correct and complete in all material respects as of such date.

AUTHORIZED SIGNATURE: _____ Phone Number: _____

[] LOAN ADVANCE:

COMPLETE OUTGOING WIRE REQUEST SECTION BELOW IF ALL OR A PORTION OF THE FUNDS FROM THIS LOAN ADVANCE ARE FOR AN OUTGOING WIRE.

From Account # _____ To Account # _____
(Loan Account #) (Name and Deposit Account #)

Amount of Advance \$ _____

Borrower's representations and warranties in the Loan and Security Agreement are true, correct and complete in all material respects on and as of the date of the requested Advance, but those representations and warranties expressly referring to another date shall be true, correct and complete in all material respects as of such date.

AUTHORIZED SIGNATURE: _____ Phone Number: _____

OUTGOING WIRE REQUEST

COMPLETE ONLY IF ALL OR A PORTION OF FUNDS FROM THE LOAN ADVANCE ABOVE ARE TO BE WIRED.

Deadline for same day processing is 12:00 noon, Pacific Time

Beneficiary Name: _____ Amount of Wire: \$ _____
Beneficiary Bank: _____ Account Number: _____
City and State: _____
Beneficiary Bank Transit (ABA) #: _____ Beneficiary Bank Code (Swift, Sort, Chip, etc.): _____

(FOR INTERNATIONAL WIRE ONLY)

Intermediary Bank: _____ Transit (ABA) #: _____

For Further Credit to: _____

Special Instruction: _____

By signing below, I (we) acknowledge and agree that my (our) funds transfer request shall be processed in accordance with and subject to the terms and conditions set forth in the agreements(s) covering funds transfer service(s), which agreements(s) were previously received and executed by me (us).

Authorized Signature: _____ 2nd Signature (if required): _____
Print Name/Title: _____ Print Name/Title: _____
Telephone # _____ Telephone # _____

EXHIBIT C

COMPLIANCE CERTIFICATE

TO: SILICON VALLEY BANK
3003 Tasman Drive
Santa Clara, CA 95054

FROM: Harmonic Inc.
549 Baltic Way
Sunnyvale, CA 94089

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

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

| REPORTING COVENANT ----- | REQUIRED ----- | COMPLIES ----- | |
|-------------------------------------|--------------------------|-------------------|----|
| Quarterly financial statements + CC | Quarterly within 45 days | Yes | No |
| Annual (Audited) | FYE within 120 days | Yes | No |
| Collateral Audit | Annual | Yes | No |

| FINANCIAL COVENANT ----- | REQUIRED ----- | ACTUAL ----- | COMPLIES ----- | |
|----------------------------------------|-------------------|-----------------|-------------------|----|
| Maintain at all times: | | | | |
| Unrestricted cash and cash equivalents | \$65,000,000 | | Yes | No |

COMMENTS REGARDING EXCEPTIONS: See Attached.

BANK USE ONLY

Sincerely,

Received by: _____
AUTHORIZED SIGNER

HARMONIC INC.

Date: _____

SIGNATURE

Verified: _____
AUTHORIZED SIGNER

TITLE

Date: _____

DATE

Compliance Status: Yes No

HARMONIC INC. AND SUBSIDIARIES

SUBSIDIARIES OF THE REGISTRANT

The following table shows certain information with respect to the active subsidiaries of the Company as of December 31, 2003:

| NAME | STATE OR OTHER JURISDICTION OF INCORPORATION | PERCENT OF VOTING SECURITIES OWNED BY HARMONIC |
|-----------------------------------|----------------------------------------------------|------------------------------------------------------|
| ----- | ----- | ----- |
| Harmonic (Asia Pacific) Ltd. | Hong Kong | 100% |
| Harmonic Data Systems Ltd. | Israel | 100% |
| Harmonic Europe S.A.S. | France | 100% |
| Harmonic Germany GmbH | Germany | 100% |
| Harmonic International Inc. | U.S.A. | 100% |
| Harmonic International Limited | Bermuda | 100% |
| Harmonic Lightwaves (Israel) Ltd. | Israel | 100% |
| Harmonic (UK) Ltd. | United Kingdom | 100% |

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-105873, 333-91464, 333-84720, 333-59248, 333-43160, 333-86649, 333-65051, 333-44265, 333-38025 and 033-94138) and Form S-3 (No. 333-84430) of Harmonic Inc. of our report dated March 5, 2004, relating to the financial statements and financial statement schedule, which appears in this Annual Report on Form 10-K.

/s/ PRICEWATERHOUSECOOPERS LLP

PRICEWATERHOUSECOOPERS LLP

San Jose, California
March 5, 2004

Harmonic Inc.
Certification of Principal Executive Officer
Pursuant to Section 302 of
The Sarbanes-Oxley Act of 2002

I, Anthony J. Ley, Chairman, President and Chief Executive Officer of Harmonic Inc., certify that:

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

Date: March 8, 2004

By: /s/Anthony J. Ley

Anthony J. Ley

Chairman, President and Chief
Executive Officer
(Principal Executive Officer)

Harmonic Inc.
Certification of Principal Financial Officer
Pursuant to Section 302 of
The Sarbanes-Oxley Act of 2002

I, Robin N. Dickson, Principal Financial Officer of Harmonic Inc., certify that:

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

Date: March 8, 2004

By: /s/Robin N. Dickson

Robin N. Dickson
Chief Financial Officer

(Principal Financial Officer)

Harmonic Inc.
Certification of Principal Executive Officer
Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

As of the date hereof, I, Anthony J. Ley, Chairman, President and Chief Executive Officer of Harmonic Inc. (the "Company"), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the annual report of the Company on Form 10-K for the fiscal year ended December 31, 2003, as filed with the Securities and Exchange Commission (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company. This written statement is being furnished to the Securities and Exchange Commission as an exhibit accompanying such Report and shall not be deemed filed pursuant to the Securities Exchange Act of 1934.

Date: March 8, 2004

/s/ Anthony J. Ley

Anthony J. Ley
Chairman, President and Chief
Executive Officer
(Principal Executive Officer)

Harmonic Inc.
Certification of Principal Financial Officer
Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

As of the date hereof, I, Robin N. Dickson, Chief Financial Officer of Harmonic Inc. (the "Company"), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the annual report of the Company on Form 10-K for the fiscal year ended December 31, 2003, as filed with the Securities and Exchange Commission (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company. This written statement is being furnished to the Securities and Exchange Commission as an exhibit accompanying such Report and shall not be deemed filed pursuant to the Securities Exchange Act of 1934.

Date: March 8, 2004

/s/ Robin N. Dickson

Robin N. Dickson
Chief Financial Officer
(Principal Financial Officer)