
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, 2004



**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 July 2, 2004, the aggregate market value of the voting Common Stock held by non-affiliates of the Registrant was \$502,224,776. 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 73,053,069 on March 1, 2005.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the Registrant's 2005 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, 2004) are incorporated by reference in Part II and Part III of this Form 10-K.

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FORWARD LOOKING STATEMENTS

Some of the statements contained in this Annual Report on Form 10-K are forward-looking statements that involve risk and uncertainties. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, including, without limitation, statements regarding our expectations, beliefs, intentions or strategies regarding the future. All forward-looking statements included in this Annual Report on Form 10-K are based on information available to us on the date hereof, and we assume no obligation to update any such forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors, which may cause our actual results to differ materially from those implied by the forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “may,” “will,” “should,” “expects,” “plans,” “anticipates,” “believes,” “intends,” “estimates,” “predicts,” “potential,” or “continue” or the negative of these terms or other comparable terminology. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot offer any assurance of future results, levels of activity, performance or achievements. Important factors that may cause actual results differ from expectations include those discussed “Factors That May Affect Future Results of Operations” beginning on page 30 in this document. The terms “Harmonic,” “the Company,” “we,” “us,” “its,” and “our” as used in this Annual Report on Form 10-K refer to Harmonic Inc. and its subsidiaries and its predecessors as a combined entity, except where the context requires otherwise.

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 (HDTV), 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 direct broadcast satellite (DBS) operators. We also derive a growing 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 and digital video services

The demand for broadband services has increased significantly in recent years due in large part to the dramatic growth of the Internet. In addition, 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. 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. Changes in the television industry have led to a proliferation of new television channels, including the introduction of high definition channels, and to the development of interactive and on-demand television services which are provided on an individual, as opposed to a broadcast basis.

Competition and deregulation

Recent regulatory reform has spurred competition among communication service providers worldwide to offer combinations of video, voice and data services. Historically, U.S. long distance carriers and regional Bell operating companies, or RBOCs, provided only telephony services in the residential market. Cable television multiple system operators, or MSOs, provided video programming. DBS operators previously provided only video programming services 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 now offer broadband services, including broadcast digital video, VOD, internet access and telephony, over many of their cable systems. Similarly, telephone companies, or telcos, have deployed various digital subscriber line, or DSL, technologies for high-speed data services over their existing copper networks. A number of telcos have begun to deploy alternative delivery systems such as fiber to the premises, or FTTP, for data and video transmission, and some have also deployed video services over their DSL networks. Following regulatory changes, DBS operators have now introduced local channels in all major markets, allowing them to compete more effectively with cable MSOs. Additionally, in many major metropolitan areas, new carriers have entered the communications services market, although many 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 entry of telephone companies into the business of providing video services.

Our cable market

To address increasing competition and demand for high-speed broadband services, cable operators have introduced 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. 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 VOD, as well as HDTV on their digital platforms. VOD allows subscribers to order, start, pause and stop selected movies and other content at their own discretion. In order to provide high-speed Internet service, cable operators have deployed cable modems in an increasing number of their systems. According to the National Cable & Telecommunications Association, there were an estimated 19.4 million cable modem subscribers in the U.S. as of September 30, 2004. Some cable operators are also upgrading and building out their networks to provide telephony 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 U.S. 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 U.S. cable operators have indicated that the completion of major network upgrades, which involved significant labor and construction costs, which will result in lower capital expenditures in future periods. 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 a hybrid fiber-coax, or 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 to upgrade headends and the transmission network to handle the greater volume and complexity of network traffic. For example, certain cable operators have begun to implement digital simulcasting, which makes all channels available in digital format, in addition to certain of the same channels in analog format for analog-only cable subscribers. We expect that, although total U.S. cable capital expenditures are declining, cable operators will continue to invest capital to more effectively manage available bandwidth in the headend as well as make further network improvements, such as node segmentation, which is the support of fewer homes on a single optical node. These network improvements will facilitate the broad rollout of services such as IP telephony and high-speed data services for both residences and business enterprises.

Our satellite market

Satellite operators around the world have established digital television services that serve 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 cable or broadcast television. The increasing availability of digital set top boxes and small low cost receiving dishes for subscribers' homes facilitated the rollout of DBS services. DBS services, however, operate mostly in a one-way environment. Signals are 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 or VOD.

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 U.S. and have made local channels available in all major markets. In the U.S., "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, although the need to provide more HDTV channels in the future will pose continuing bandwidth challenges and may require further capital expenditures by such operators.

Our telco market

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 accomplished principally by the deployment of DSL technology or, in certain cases, over FTTP networks. 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, relatively 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 and improvements in DSL technology has allowed certain operators to introduce video services. The major RBOCs have now begun to implement plans to rebuild or upgrade their networks to offer bundled video, voice and data services.

Other markets

In the terrestrial broadcasting market, operators in many countries are now required by regulation to convert from analog to digital transmission in order to free up the broadcast spectrum. The conversion to digital transmission 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. Similarly, operators of wireless broadcast systems require encoding for the conversion of analog signals to digital.

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 in a competitive environment 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. Personalized video services, such as VOD, 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. In addition, certain operators have initiated trials to deliver live television to cellular telephones and other mobile devices. Compression of video and data to utilize effectively the available bandwidth, the cost-effective transport of digital traffic within networks, and the construction of robust "fat pipes" for distribution of content are all essential elements in the ability of operators to maximize revenue and minimize capital expenditures and operating costs.

Current industry conditions

The telecommunications industry was particularly impacted by the recent economic recession, adverse conditions in capital markets and financial difficulties in both the service and equipment sectors, including bankruptcies. Many of our domestic and international customers accumulated significant levels of debt and have begun or completed reorganizations and financial restructurings. 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. In Europe, rapid consolidation of the cable industry through acquisitions also led to significant levels of debt at the major MSOs, and companies such as NTL and UPC went through bankruptcy proceedings. European digital broadcasters, such as ITV Digital, Kirsch and Quiero, also filed for protection from creditors. We believe that the financial condition of many of our customers has stabilized or improved, but industry capital spending has not returned to levels seen in 1999 and 2000. Furthermore, it is likely that continuing industry restructuring will take place via mergers or spin-offs, such as the Comcast acquisition of AT&T Broadband in 2002, the acquisition by The News Corporation Ltd. in 2003 of an indirect controlling interest in Hughes Electronics, the parent company of DIRECTV, and other more recent transactions, such as the privatization of Cox Communications, the proposed sale of Adelphia out of bankruptcy, and the proposed sale of Cablevision's VOOOM! satellite assets to Echostar. 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 and multiplexers allow our customers to convert analog video to digital and to process this output into a compressed video 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 systems allow 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 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 (CS) 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 and is designed with sufficient processing power to function with new video compression standards currently being introduced. The MV450 encoder is designed for encoding of high definition television signals.

Ion multichannel encoders. Introduced in 2004, the Ion encoder is a modular encoder designed for lower cost, higher density applications. Up to four encoder modules can be inserted into a single rack unit.

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 inputs, allowing the operator to use bandwidth efficiently by delivering IP signals from the headend to the edge of the network for subsequent modulation onto 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 for aggregating, 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. Products such as our NMX Digital Service Manager 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 (BAN) 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 Dense Wave Division Multiplexing, or DWDM, and Coarse Wave Division Multiplexing, or CWDM, 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 cable networks employing such features as redundant rings, hub interconnects and broadcast layer transmission. The MAXLink Plus further increases the channel capacity of cable and other networks and can transmit over distances in excess of 200 kilometers. Certain models of these optical transmitters and amplifiers are also used in passive optical networks by telephone companies and other broadband providers offering broadcast video services.

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 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.

CWDM Commercial Services. Our CWDM Commercial Services solution allows a cable operator to leverage his existing HFC network by providing high-speed services on a wavelength of a shared fiber to individual business customers.

Optical nodes and return path products

We offer a variety 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

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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 2004.

<u>United States</u>	<u>International</u>
Adelphia Communications	Alcatel
Cablevision/ VOOM	Aliant
Charter Communications	Bell Express Vu
Comcast	Capella
Cox	NTL
DIRECTV	Siemens
EchoStar	SkyPerfect
Sinclair Broadcasting	Sumitomo/BNMux
Thales	Telindus
Time Warner Cable	Telewest

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 2004, 2003 and 2002 accounted for approximately 55%, 65% and 61% of net sales, respectively. In 2004, Comcast accounted for 17% of net sales. In 2003, Comcast accounted for 32% of net sales. In 2002, 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 entity would have been 17% of net sales. Although we are attempting to broaden our customer base by penetrating new markets such as the telco and broadcast markets, and expanding 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. acquired an indirect controlling interest in Hughes Electronics, the parent company of DIRECTV in 2003. More recently, this trend has continued with the privatization of Cox Communications, the planned sale of Adelphia out of bankruptcy, and the proposed sale of Cablevision's VOOM! satellite assets to EchoStar. 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."

Sales to customers outside of the U.S. in 2004, 2003 and 2002 represented 42%, 29%, and 29% of net sales, respectively. The increase in our international sales in 2004 from 2003 was due in part to the impact of a major project for a Japanese customer and in part to a general increase in capital spending by international customers. 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 announced or completed reorganizations and financial restructurings, including bankruptcy filings. Additional 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 U.S. 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 U.S. 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, which includes 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 organization develops strategies for product lines and market segments, and, in conjunction with our sales force, identifies the evolving technical and application needs of customers so that our product development resources can be most effectively and efficiently deployed to meet anticipated product requirements. Our marketing organization is also responsible for setting price levels, demand forecasting and general support of the sales force, particularly at major accounts. We have many programs in place to heighten industry awareness of Harmonic and our products, including participation in technical conferences, publication of articles in industry journals and exhibitions at trade shows.

MANUFACTURING AND SUPPLIERS

We use third party contract manufacturers extensively to assemble full turnkey products and a substantial majority of subassemblies and modules for our products. 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 was completed in the summer of 2004. Difficulties in managing relationships with contract manufacturers could impede our ability to meet our customers' requirements and adversely affect our operating results. See “Factors That May Affect Our Future Results of Operations — We Purchase Several Key Components, Subassemblies And Modules Used in The Manufacture or Integration of Our Products From Sale or Limited Resources, And We Are Increasingly Dependent on Contract Manufacturers.”

Our manufacturing operations consist primarily of final assembly and testing 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 be sure 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 or cash flows.

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. For example, we are dependent on LSI Logic for video

encoding chips. 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 ending in late 2006 with automatic annual renewals. 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 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 or cash flows.

INTELLECTUAL PROPERTY

We currently hold 39 issued U.S. patents and 19 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 or 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. 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 or 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, 2004, backlog, including deferred revenue, amounted to \$55.0 million, compared to \$45.8 million at December 31, 2003. 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, 2004, 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. The principal competitive factors in these markets include product performance, reliability, price, breadth of product offerings, network management capabilities, sales and distribution capabilities, technical support and service, and relationships with network operators. We believe that we compete favorably in each of these categories. Harmonic’s competitors in the fiber optics systems business include corporations such as C-Cor, 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 or cash flows.

If any of our competitors’ products or technologies were to become the industry standard, our business could be seriously harmed. 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. 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, which could result 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 2004, 2003 and 2002 were \$35.6 million, \$35.1 million and \$40.8 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 heavily on video compression systems in MPEG2 and the new compression standards (MPEG4 or AVC and Microsoft VC-1). We also devote resources to products for MPEG over Internet Protocol (IP), VOD and switched broadcast and stream management software. The BAN division research and

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development efforts are focused in broadband optical and RF products that enable the transmission of video over fiber optic networks.

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, 2004, we employed a total of 590 people, including 217 in sales, service and marketing, 172 in research and development, 104 in manufacturing operations and 97 in a general and administrative capacity. There are 467 employees in the U.S. and 123 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. From January 1, 2001 to December 31, 2003, we 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. In response to sales growth in 2004, we commenced hiring again, and added 33 people in 2004. 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 March 1, 2005:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Anthony J. Ley	66	Chairman of the Board of Directors, President & Chief Executive Officer
Robin N. Dickson	57	Chief Financial Officer
Patrick Harshman	40	President, Broadband Access Networks
Yaron Simler	46	President, Convergent Systems
Israel Levi	65	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 U.S., 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. (U.K.) and a senior member of the I.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. Before assuming his current position, Dr. Harshman was Vice President of Marketing, responsible for

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Harmonic's digital video and fiber optic transmission product lines. 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.

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 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

All of our facilities are leased, including our principal operations and corporate headquarters in Sunnyvale, California. We also have research and development centers in Colorado and New York, several sales offices in the U.S., sales and support centers in the United Kingdom, France, and China, and a research and development center in Israel. Our leases, which expire at various dates through September 2010, are for approximately 400,000 square feet of space. In the U.S., of the 366,000 square feet under lease, approximately 137,000 square feet is in excess of our requirements and we no longer occupy, do not intend to occupy, and have subleased, or 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 U.S. 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.

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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. The U.S. Court of Appeals for the Ninth Circuit heard oral arguments on February 17, 2005, but has not ruled on the appeal 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 U.S. 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 Circuit 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 actions, 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 or 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 or cash flows.

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Harmonic is involved in other litigation and may be subject to claims arising in the normal course of business. In the opinion of management the amount of ultimate liability with respect to these matters in the aggregate will not have a material adverse effect on the Company or its operating results, financial position or 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, 2004.

PART II

Item 5. Market for the Registrant's Common Equity, Related Stock Holder Matters, and Issuer Purchases of Equity Securities

Market information: 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:

	<u>High</u>	<u>Low</u>
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
2004		
First quarter	\$13.75	\$7.35
Second quarter	10.55	5.28
Third quarter	7.46	4.86
Fourth quarter	9.11	6.84

Holders of record: At March 1, 2005 there were 498 stockholders of record of Harmonic's Common Stock.

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.

Securities authorized for issuance under equity compensation plans: The disclosure required by Item 201(d) of Regulation S-K is set forth in the 2005 Proxy Statement under the caption "Equity Plan Information" and is incorporated herein by reference.

Sales of unregistered securities: During the fiscal year ended December 31, 2004, Harmonic did not sell any securities in transactions that were not registered under the Securities Act of 1933. On February 25, 2005, Harmonic purchased all of the issued and outstanding shares of Broadcast Technology Ltd. (BTL), a private U.K. company, for a purchase consideration of approximately £3.0 million in cash and 169,112 shares of Harmonic's common stock. Harmonic purchased all of the shares of BTL directly from, and paid the consideration thereof directly to, the shareholders of BTL. In connection with such sale of our common stock, Harmonic relied upon the exemption from registration under the Securities Act provided by Regulation S. Harmonic based its reliance upon Regulation S on the fact that the offer and sale of Harmonic's common stock was made in the U.K., there were no directed selling efforts made by Harmonic in the U.S. with respect to such securities, and Harmonic required the purchasers of its common stock to agree to such restrictions on resale and other matters as required by Regulation S.

Purchase of equity securities by the issuer and affiliated purchasers: During the three months ended December 31, 2004, Harmonic did not, nor did any of its affiliated entities, repurchase any of Harmonic's equity securities.

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,				
	2004	2003	2002	2001	2000
(In thousands, except per share data)					
Consolidated Statement of Operations Data					
Net sales	\$248,306	\$182,276	\$186,632	\$ 203,810	\$ 263,046
Gross profit(1)	104,495	60,603	54,429	1,555	75,171
Income (loss) from operations(1)(2)	1,436	(30,545)	(77,349)	(168,787)	(1,683,035)
Net income (loss)(1)	1,574	(29,433)	(76,918)	(166,407)	(1,654,008)
Basic net income (loss) per share	0.02	(0.47)	(1.29)	(2.84)	(34.06)
Diluted net income (loss) per share	0.02	(0.47)	(1.29)	(2.84)	(34.06)
Consolidated Balance Sheet Data					
Cash, cash equivalents and short-term investments	\$100,607	\$112,597	\$ 49,158	\$ 54,277	\$ 99,669
Working capital	117,112	95,389	31,246	66,608	194,618
Total assets	242,356	224,726	173,754	238,056	425,944
Long term debt, including current portion	2,339	1,656	2,572	2,746	—
Stockholders' equity	110,557	106,161	62,183	135,054	295,702

(1) The 2004 gross profit, income from operations and net income included credits of \$4.0 million for products sold during the year that had been written down in prior years.

The 2003 gross profit, loss from operations and net loss included credits of \$4.7 million for products sold during the year that 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 products sold during the year that 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) Income (loss) from operations for 2004, 2003, 2002, 2001 and 2000 included amortization of intangible assets of \$13.9 million, \$13.9 million, \$18.7 million, \$20.7 million and \$234.2 million, respectively. On January 1, 2002,

Harmonic ceased amortization of goodwill on adoption of SFAS No. 142, "Goodwill and Other Intangible Assets."

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, HDTV, high-speed Internet access and telephony. Our digital video systems enable our customers to process video for distribution over cable, satellite, telephone and wireless networks. We also provide fiber optic transmission systems to cable television operators and to certain telephone companies that offer video services to their customers.

In order to further expand our digital systems capability, Harmonic acquired C-Cube Microsystems Inc.'s Divicom business in May 2000, which provided encoding products and systems for digital television. Since the merger, 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 increased 36% in 2004, and decreased 2% in 2003 and 8% in 2002. Although industry capital spending has been 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 and the increase in 2004 compared to 2003 reflected an improved industry capital spending environment worldwide which favorably impacted Harmonic. 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 HDTV, and in part, the result of the entry of telephone companies into the business of delivering video services to their subscribers. We also believe that the improvement is due to more favorable conditions in industry capital markets and the completion or resolution of certain major business combinations, financial restructurings and regulatory issues.

Our quarterly and annual results may fluctuate significantly due to revenue recognition policies and the timing of the receipt of orders. Revenue from two significant customer orders in the third quarter of 2004 was delayed due to these factors until the fourth quarter of 2004. As a result, we expect revenue in the first quarter of 2005 will be sequentially lower than the revenue in the fourth quarter of 2004.

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 2004, sales to Comcast accounted for 17% of net sales. 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 sales to the combined entity would have been 17% of net sales.

In 2004, 2003, and 2002, sales of BAN products accounted for approximately 31%, 38%, and 41% of net sales, respectively, while CS products accounted for approximately 69%, 62%, and 59% of net sales, respectively.

Sales to customers outside of the U.S. in 2004, 2003, and 2002 represented 42%, 29%, and 29% 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. Sales denominated in foreign currencies were approximately 4% of net sales in 2004 and 2003. We expect international sales to continue to account for a significant portion of our net sales for the foreseeable future.

In 2004, annual growth in net sales of 36%, improved gross margins, and operating expense growth of 13% enabled Harmonic to return to profitability. We reported net income of \$1.6 million in 2004, compared to net losses of \$29.4 million and \$76.9 million in 2003 and 2002, respectively. Our operating results in 2004 included credits of \$4.0 million for products sold during the year which had been written down in prior years.

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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. Our operating results for 2003 also included credits to operating expenses totaling approximately \$2.2 million from the sale of our bankruptcy claims against Adelphia Communications resulting in the reversal of previously recorded bad debt provisions, and credits of \$4.7 million for products sold during the year which had been written down in prior years.

In 2002, certain of our domestic and international customers that had accumulated significant levels of debt 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 between the first quarter of 2002 and the second quarter of 2003 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 has accounted for less than 5% of net sales in each of 2002, 2003 and 2004. We believe that 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. Although this proposed combination was not completed, The News Corporation Ltd., subsequently acquired an indirect controlling interest in Hughes Electronics, the parent of DIRECTV, in December 2003.

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 1,000 at the end of 2000 to 587 at the end of 2002. We further reduced headcount to 557 in 2003, mainly by attrition, but the improved business environment in 2004 led us to increase headcount to 590 at the end of 2004. If business conditions remain favorable, we expect to continue to add to our headcount during 2005.

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 occupy, do not intend to occupy, and have subleased, or plan to sublease, and followed charges of \$30.1 million recorded for excess facilities in 2001 when the initial accruals were established.

A 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. We removed approximately 12,000 square feet of space from the excess facilities portfolio in order to eliminate a third-party offsite storage arrangement. Based on the remaining lease term of 84 months, this removal resulted in a reduction of \$3.3 million in the required excess facilities reserve. 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. The deferred rent liability was not adjusted for the change in the lease term resulting in an understatement of rent expense and the deferred rent liability at December 31, 2001, 2002 and 2003. 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 2003. Although we have entered into new subleases for approximately 60,000 square feet of space in 2004, 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.

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Harmonic often recognizes a significant portion, or the majority, 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.

In the fourth quarter of 2003, Harmonic sold and 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 was 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, strategic acquisitions of businesses, 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. The Form S-3 registration statement used in this public offering remains effective and Harmonic continues to have the ability to issue various types of securities, up to an aggregate of \$73 million.

On February 25, 2005, Harmonic purchased all of the issued and outstanding shares of Broadcast Technology Ltd., a private U.K. company, for a purchase consideration of £4.0 million, or approximately \$7.6 million. The purchase consideration consists of a payment of £3.0 million in cash and the issuance of 169,112 shares of Harmonic common stock. Broadcast Technology Ltd. develops, manufactures and distributes professional video/ audio receivers and decoders and has approximately 40 employees.

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 sales of hardware products, software products, solution sales, services and hardware and software maintenance agreements. 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, collection is reasonably assured, and risk of loss and title have transferred to the customer.

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We generally use contracts and customer purchase orders to determine the existence of an arrangement. Shipping documents and customer acceptance, when applicable, are used to verify delivery. We assess whether the sales price is fixed or determinable based on the payment terms associated with the transaction and whether the price is subject to refund or adjustment. We assess collectibility based primarily on the creditworthiness of the customer as determined by credit checks and analysis, as well as the customer's payment history.

We evaluate our products to assess whether software is more-than-incidental to a product. When we conclude that software is more-than-incidental to a product, we account for the product as a software product. Significant judgment may be required in determining whether a product is a software or hardware product.

Revenue from hardware product sales is recognized in accordance with the provisions of Staff Accounting Bulletin No. 104, "Revenue Recognition." Subject to other revenue recognition provisions, revenue on product sales is recognized when risk of loss and title has transferred, which is generally upon shipment or delivery, based on the terms of the arrangement. Revenue on shipments to distributors, resellers and systems integrators is generally recognized on delivery or sell-in. Allowances are provided for estimated returns and discounts. Such allowances are adjusted periodically to reflect actual and anticipated experience.

Distributors and systems integrators purchase our products for specific capital equipment projects of the end-user and do not hold inventory. They perform functions that include importation, delivery to the end-customer, installation or integration, and post-sales service and support. Our agreements with these distributors and systems integrators have terms which are generally consistent with the standard terms and conditions for the sale of our equipment to end users and do not provide for product rotation or pricing allowances, as are typically found in agreements with stocking distributors. We have long-term relationships with most of these distributors and systems integrators and substantial experience with similar sales of similar products. We have had extensive experience monitoring product returns from our international distributors and accordingly, we have concluded that the amount of future returns can be reasonably estimated. With respect to these sales, we evaluate the terms of sale and recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been provided, the sales price is fixed or determinable, collectibility is reasonably assured, and risk of loss and title have transferred.

When arrangements contain multiple elements, Harmonic evaluates all deliverables in the arrangement at the outset of the arrangement based on the guidance in Emerging Issues Task Force (EITF) No. 00-21, "*Accounting for Revenue Arrangements with Multiple Deliverables*." If the undelivered elements qualify as separate units of accounting based on the criteria in EITF 00-21, which include that the delivered elements have value to the customer on a stand-alone basis and that objective and reliable evidence of fair value exists for undelivered elements, Harmonic allocates the arrangement fee based on the relative fair value of the elements of the arrangement. If a delivered element does not meet the criteria in EITF 00-21 to be considered a separate unit of accounting, revenue is deferred until the undelivered elements are fulfilled. Accordingly, the determination as to whether appropriate objective and reliable evidence of fair value exists can impact the timing of revenue recognition for an arrangement.

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, including equipment acquired from third parties to be integrated with Harmonic's products, is generally recognized using the percentage of completion method in accordance with Statement of Position (SOP) 81-1 "*Accounting for Performance of Construction/ Production Contracts*." 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. Deferred revenue includes billings in excess of revenue recognized, net of deferred costs of sales. 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 or cash flows for a particular period could be adversely affected.

Revenue from hardware and software maintenance agreements is recognized ratably over the term of the maintenance agreement. First year maintenance typically is included in the original arrangement and renewed on an annual basis thereafter. Services revenue is recognized on performance of the services and costs associated with services are

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recognized as incurred. Fair value of services such as consulting and training is based upon separate sales of these services.

Significant management judgments and estimates must be made in connection with determination of the revenue to be recognized in any accounting period. Because of the concentrated nature of our customer base, different judgments or estimates made for any one large contract or customer could result in material differences in the amount and timing of revenue recognized in any particular period.

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, 2004, our allowances for doubtful accounts, returns and discounts totaled \$5.1 million.

Valuation of Inventories

Harmonic states inventories at the lower of cost or market. We provide inventory allowances based on excess and obsolete inventories determined primarily by future demand forecasts. If there were to be a sudden and significant decrease in demand for our products, or if there were a higher incidence of inventory obsolescence because of rapidly changing technology and customer requirements, we could be required to increase our inventory allowances and our gross margin could be adversely affected. Inventory management is of critical importance in order to balance the need to maintain strategic inventory levels to ensure competitive lead times against the risk of inventory obsolescence because of rapidly changing technology and customer requirements.

Impairment of Goodwill or Long-lived Assets

We perform an evaluation of the carrying value of goodwill on an annual basis and of intangibles and other 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, goodwill or long-lived assets. There can be no assurance that future impairment tests will not result in a charge to earnings. At December 31, 2004, our carrying values for goodwill and intangible assets totaled \$1.8 million and \$4.6 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 or cash flows. At December 31, 2004, our accruals for excess facilities totaled \$29.4 million.

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

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of these legal proceedings could have a material adverse effect on our business, financial position, operating results or 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 \$104.9 million in 2002 which was increased to \$123.6 million in 2003 and decreased to \$122.9 million in 2004. At December 31, 2004 we have fully reserved for our net deferred tax assets related to temporary differences and 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.

Results of Operations

Harmonic's historical consolidated statements of operations data for each of the three years ended December 31, 2004, 2003, and 2002 as a percentage of net sales, are as follows:

	Fiscal Year Ended		
	December 31,		
	2004	2003	2002
Net sales	100%	100%	100%
Cost of sales	58	67	71
Gross profit	42	33	29
Operating expenses:			
Research and development	14	19	22
Selling, general and administrative	24	27	43
Amortization of intangibles	3	4	5
Total operating expenses	41	50	70
Income (loss) from operations	1	(17)	(41)
Interest and other income, net	—	1	—
Income (loss) before income taxes	1	(16)	(41)
Provision for (benefit from) income taxes	—	—	—
Net income (loss)	1%	(16%)	(41%)

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, 2004, 2003, and 2002, are presented in the tables below. Also presented is the related

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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, 2004 and 2003.

Segmental Sales Data:	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Convergent Systems	\$171,410	\$113,207	\$109,718
Broadband Access Networks	76,896	69,069	76,914
Net sales	\$248,306	\$182,276	\$186,632
Convergent Systems Increase	\$ 58,203	\$ 3,489	
Broadband Access Networks Increase (decrease)	7,827	(7,845)	
Total Increase (decrease)	\$ 66,030	\$ (4,356)	
Convergent Systems Percent change	51.4%	3.2%	
Broadband Access Networks Percent change	11.3%	(10.2%)	
Total Percent change	36.2%	(2.3%)	

Net sales increased in the CS division in 2004 compared to 2003, primarily due to stronger spending by international customers and to a lesser degree due to continued spending by domestic customers for the rollout of new services. The CS division sold significantly more encoders in 2004 compared to 2003, offset by a reduction in sales of its Narrowcast Service Gateway (NSG) product for VOD due to the substantial completion of initial deployments by certain domestic cable customers. The increased sales of encoders in 2004 was due in part to the major upgrade by a Japanese customer of their satellite facilities during 2004, and in part to sales of headend equipment to two major international telephone companies for video deployments. Net sales increased in the BAN division in 2004 compared to 2003 as a result of stronger overall spending by U.S. cable operators resulting in increased sales of transmitters and nodes related to continuing network improvements such as node segmentation, and to a lesser degree by an improvement in spending by international cable operators.

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.

Geographic Sales Data:	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
U.S.	\$143,818	\$130,226	\$133,222
International	104,488	52,050	53,410
Net sales	\$248,306	\$182,276	\$186,632
U.S. Increase (decrease)	\$ 13,592	\$ (2,996)	
International Increase (decrease)	52,438	(1,360)	
Total Increase (decrease)	\$ 66,030	\$ (4,356)	
U.S. Percent change	10.4%	(2.2%)	
International Percent change	100.7%	(2.5%)	
Total Percent change	36.2%	(2.3%)	

Net sales in the U.S. increased in 2004 compared to 2003 primarily due to stronger overall spending during 2004 by domestic customers from the roll-out of new services, such as VOD and HD television programming, as well as from increased sales of transmitters and nodes for major network upgrades related to continuing network improvements, such as node segmentation. The increased international sales in 2004 was due in part to the impact from a major

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upgrade by a Japanese customer of its satellite facilities, and in part to sales of headend equipment to two major international telephone companies for video deployments. The increased international sales in 2004 as compared to 2003 was also due to increased international capital spending primarily in Europe, Canada, Latin America, Asia and the Caribbean.

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 reflected the continued depressed market conditions, 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, 2004, 2003, and 2002 are presented in the table below. Also presented is the related dollar and percentage increase in gross profit as compared with the prior year, for each of the two years ended December 31, 2004 and 2003.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Gross profit	\$ 104,495	\$ 60,603	\$ 54,429
As a % of net sales	42.1%	33.2%	29.2%
Increase	\$ 43,892	\$ 6,174	
Percent change	72.4%	11.3%	

The increase in gross profit in 2004 compared to 2003 was primarily due to higher sales, lower third party manufacturing costs, improvements in factory efficiencies, and a higher proportion of CS division sales, which historically carry a more favorable product margin. These factors, which contributed to higher gross margins in 2004 compared to 2003, were partially offset by a reduction in the benefit related to the sale of products for which the cost basis had been written down in prior years. This benefit was \$4.0 million in 2004, as compared to a benefit of \$4.7 million in 2003. We do not expect any substantial benefit in future periods from the sale of products for which the cost basis was written down in prior periods. There was no change in the amortization of intangibles of \$6.2 million in 2004 compared to 2003, however, amortization of intangibles in 2005 is expected to decrease by approximately \$4.1 million.

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 a reduced benefit of \$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.

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, 2004, 2003, and 2002 are presented in the table below. Also presented is the

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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, 2004 and 2003.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Research and development	\$ 35,585	\$ 35,107	\$ 40,829
As a % of net sales	14.3%	19.3%	21.9%
Increase (decrease)	\$ 478	\$ (5,722)	
Percent change	1.4%	(14.0%)	

The increase in research and development expense in 2004 compared to 2003 was as a result of higher compensation expenses of \$2.6 million, resulting from increased headcount and higher compensation costs, and increased outside services for the development and qualification of FTTP products. Partially offsetting these increases was lower depreciation of \$0.9 million, lower prototype material costs of \$0.7 million and lower facilities and allocation expenses of \$1.2 million.

The decrease in research and development expenses 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.

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, 2004, 2003, and 2002 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, 2004 and 2003.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Selling, general and administrative	\$ 59,742	\$ 48,309	\$ 81,427
As a % of net sales	24.1%	26.5%	43.6%
Increase (decrease)	\$ 11,433	\$ (33,118)	
Percent change	23.7%	(40.7%)	

The increase in selling, general and administrative expenses in 2004 compared to 2003 was primarily due to increases in compensation and incentive related expenses of \$6.7 million, increased selling expenses of \$0.8 million, increases in corporate governance costs of \$2.0 million and increased facilities and allocation expenses of \$2.0 million, partially offset by lower depreciation expense of \$0.9 million and lower legal expenses due to a charge of \$2.7 million in 2003 related to the settlement of litigation. In addition, in 2003, credits to bad debt expenses totaling \$4.3 million were recorded, including \$2.2 million due to the sale of Adelphia bankruptcy claims.

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 Adelphia 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.

Amortization of Intangibles

Harmonic's amortization of intangibles expense charged to operating expenses, and the expense as a percentage of consolidated net sales, for each of the three years ended December 31, 2004, 2003, and 2002 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, 2004 and 2003.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Amortization of intangibles	\$ 7,732	\$ 7,732	\$ 9,522
As a % of net sales	3.1%	4.2%	5.1%
Increase (decrease)	\$ —	\$ (1,790)	
Percent change	—	(18.8%)	

There was no change in amortization of intangibles charged to operating expenses in 2004 compared to 2003. Harmonic expects to record a total of approximately \$2.6 million in amortization of existing intangibles in operating expenses in 2005.

The decrease in 2003 compared to 2002 was due principally to the intangibles arising from the Cogent acquisition becoming fully amortized.

Interest Income, Net

Harmonic's interest income, net, and interest income, net as a percentage of consolidated net sales, for each of the three years ended December 31, 2004, 2003, and 2002 are presented in the table below. Also presented is the related dollar and percentage increase (decrease) in interest income, net as compared with the prior year, for each of the two years ended December 31, 2004 and 2003.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Interest income, net	\$ 1,554	\$ 460	\$ 1,096
As a % of net sales	0.6%	0.3%	0.6%
Increase (decrease)	\$ 1,094	\$ (636)	
Percent change	237.8%	(58.0%)	

The increase in 2004 compared to 2003 was due primarily to larger cash and short-term investment balances during the respective periods of 2004 as compared to 2003 principally due to the investment of net proceeds of \$71.4 million from the public offering of common stock in the fourth quarter of 2003.

The decrease in 2003 compared to 2002 was due primarily to lower cash and short-term investment balances and lower interest rates during the respective periods of 2003 as compared to 2002.

Other Income (Expense), Net

Harmonic's other income (expense), net, as a percentage of consolidated net sales, for each of the three years ended December 31, 2004, 2003, and 2002 are presented in the table below. Also presented is the related dollar and

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percentage increase (decrease) in interest and other income (expense), net as compared with the prior year, for each of the two years ended December 31, 2004 and 2003.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Other income (expense), net	\$ (827)	\$ 952	\$ (165)
As a % of net sales	(0.3%)	0.5%	(0.1%)
Increase (decrease)	\$ (1,779)	\$ 1,117	
Percent change	(186.9%)	677.0%	

The decrease in 2004 compared to 2003 was primarily due to the effect from losses on foreign exchange of \$0.6 million, compared to a gain from foreign exchange of \$1.1 million in 2003.

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.

Income Taxes

Harmonic's provision for income taxes, and provision for income taxes as a percentage of consolidated net sales, for each of the three years ended December 31, 2004, 2003, and 2002 are presented in the table below. Also presented is the related dollar and percentage increase (decrease) in provision for income taxes as compared with the prior year, for each of the two years ended December 31, 2004 and 2003.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Provision for income taxes	\$ 589	\$ 300	\$ 500
As a % of net sales	0.2%	0.2%	0.3%
Increase (decrease)	\$ 289	\$ (200)	
Percent change	96.3%	(40.0%)	

Our effective tax rate was 27.2% in 2004, 1.0% in 2003 and 0.7% in 2002. Harmonic recorded a provision for income taxes of \$0.6 million in 2004 principally due to foreign income taxes. 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 \$104.9 million in 2002 to \$123.6 million in 2003 and decreased to \$122.9 million in 2004. 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, 2004 and December 31, 2003.

Segments

Harmonic's management uses income from segment operations as its measure of segment profitability. Income from segment operations excludes intangible amortization expense, corporate expenses, including excess facilities charges, and interest and other income, net. See Note 13 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 income (loss) from segment operations and the income (loss) as a percentage of consolidated net sales, for each of the three years ended December 31, 2004, 2003, and 2002 are presented in the table below. Also

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presented is the related dollar and percentage increase (decrease) in segment operations results as compared with the prior year, for each of the two years ended December 31, 2004 and 2003.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Convergent Systems (CS)			
Income (loss) from segment operations	\$ 26,427	\$ (4,398)	\$ (15,649)
As a % of segment net sales	15.4%	(3.9%)	(14.3%)
Increase (decrease)	\$ 30,825	\$ 11,251	
Percent change	—	71.9%	

The improved CS segment results in 2004 compared to 2003 were due to a 51% increase in sales, lower third party manufacturing costs, and a more favorable margin on the mix of products sold, slightly offset by an increase in operating expenses as compared to 2003. The 2004 increases in operating expenses were as a result of higher selling expenses and slightly higher research and development expenses as compared to 2003. CS segment results included credits of \$0.1 million in 2004 related to products sold in 2004 for which the cost basis had been written down in prior years.

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.

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Broadband Access Networks (BAN)			
Income or (loss) from segment operations	\$ 8,110	\$ 1,102	\$ (4,033)
As a % of segment net sales	10.5%	1.6%	(5.2%)
Increase (decrease)	\$ 7,008	\$ 5,135	
Percent change	635.9%	—	

The improved BAN segment results in 2004 compared to 2003 were due to an 11% increase in sales and a more favorable margin on the mix of products sold during 2004. BAN segment results included credits of \$3.9 million in 2004 related to products sold in 2004 for which the cost basis had been written down in prior years.

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.

Liquidity and Capital Resources

	Fiscal Year Ended December 31, (in thousands, except percentages)		
	2004	2003	2002
Cash, cash equivalents and short-term investments	\$ 100,607	\$ 112,597	\$ 49,158
Net cash used in operating activities	\$ (9,022)	\$ (5,559)	\$ (5,404)
Net cash used in investing activities	\$(10,065)	\$(46,369)	\$(12,668)
Net cash provided by financing activities	\$ 3,877	\$ 72,335	\$ 3,596

As of December 31, 2004, cash, cash equivalents and short-term investments totaled \$100.6 million, compared to \$112.6 million as of December 31, 2003. Cash used in operations was \$9.0 million in 2004 compared to \$5.6 million in 2003. The increased use of cash in operations in 2004 was primarily due to increased accounts receivable and inventory, and reduced non-cash charges for depreciation and amortization, which was substantially offset by a change to net income in 2004 from a net loss in 2003. The higher accounts receivable was due to the increase in sales in the fourth quarter to \$85.6 million in 2004 compared to \$56.3 million in the same period of 2003.

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Depreciation decreased primarily due to a significant amount of equipment being fully depreciated during 2004. The Company's inventories increased by \$19.3 million between December 31, 2003 and December 31, 2004 resulting principally from management decisions to increase inventories to support increased orders and revenue levels. We experienced an increase of 36% in net sales for 2004 compared to 2003 and we expect revenue in the first six months of 2005 to increase significantly compared to \$112 million in net sales for the first six months of 2004. Backlog has increased to \$55.0 million at December 31, 2004 compared to \$45.8 million at December 31, 2003 and significant inventory purchases had been made in 2004 for these orders. In addition, we have deployed higher amounts of inventory for demonstration purposes, including major laboratory trials of large, complex systems at our customers' premises.

Additions to property, plant and equipment were \$6.3 million during 2004 compared to \$3.4 million in 2003. The increases in 2004 and 2003 were due primarily to the acquisition of test equipment. Harmonic currently expects capital expenditures to be approximately \$8 million during 2005.

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, strategic acquisitions of businesses, 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, 2004, approximately \$15.8 million of pre-merger tax liabilities remained 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 2005, including a \$5.8 million payment Harmonic made in February 2005 to settle the tax obligation in one country. 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 2005 from these payments. In the event these liabilities are more than \$15.8 million, LSI is obligated to indemnify Harmonic for the additional amount.

Harmonic has a bank line of credit facility with Silicon Valley Bank, which provides for borrowings of up to approximately \$14.0 million, including \$4.0 million for equipment under a secured term loan. This facility, which was amended and restated in December 2004, expires in December 2005 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 \$50.0 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, 2004, Harmonic was in compliance with the covenants under this line of credit facility. An amendment to the line of credit facility entered into during December 2004 resulted in Harmonic paying a fee of approximately \$25,000 and requires payment of approximately \$37,000 of additional fees if Harmonic does not maintain an unrestricted deposit of \$20.0 million with Silicon Valley Bank. Future borrowings pursuant to the line bear interest at the bank's prime rate (5.25% as of December 31, 2004) or prime plus 0.5% for equipment borrowings. Borrowings are payable monthly and are collateralized by all of Harmonic's assets. As of December 31, 2004, \$2.3 million was outstanding under the equipment term loan portion of this facility and \$1.9 million was borrowed during 2004. The term loan is payable monthly, including principal and interest at 5.75% per annum on outstanding borrowings as of December 31, 2004 and matures at various dates through December 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, 2004.

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Harmonic's cash and investment balances at December 31, 2004 were \$100.6 million. 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 facility 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.

Future payments under contractual obligations, and other commercial commitments, as of December 31, 2004, were as follows (in thousands):

	Payments Due by Period				
	Total Amounts Committed	1 year or less	2-3 years	4-5 years	Over 5 years
Contractual Obligations					
Operating Leases ⁽¹⁾	\$ 69,022	\$ 10,191	\$23,718	\$25,441	\$9,672
Inventory Purchase Commitments	35,216	35,216		—	—
C-Cube Pre-Merger Tax Liabilities	15,800	15,800		—	—
Long-Term Debt	2,339	1,067	1,272	—	—
Interest payments on long-term debt	178	111	67	—	—
Foreign currency forward exchange contracts	890	890	—	—	—
Capital lease obligations	246	84	162	—	—
Total Contractual Obligations	\$123,691	\$ 63,359	\$25,219	\$25,441	\$9,672

	Amount of Commitment Expiration Per Period				
	Total Amounts Committed	1 year or less	2-3 years	4-5 years	Over 5 years
Other Commercial Commitments					
Standby Letters of Credit	\$ 1,503	\$ 1,503	—	—	—
Indemnifications ⁽²⁾	—	—	—	—	—
Guarantees	—	—	—	—	—
Total Commercial Commitments	\$ 1,503	\$ 1,503	—	—	—

(1) Operating lease commitments include \$28.4 million provided for as 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, 2004.

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 2004, the Financial Accounting Standards Board, or FASB, issued SFAS No. 151, *Inventory Costs*, to amend the guidance in Chapter 4, *Inventory Pricing*, of FASB Accounting Research Bulletin No. 43, *Restatement and Revision of Accounting Research Bulletins*. SFAS 151 clarifies the accounting for abnormal amounts of idle facility expense, freight, handling costs, and wasted material (spoilage) and requires these costs be treated as current period charges. Additionally, SFAS 151 requires that allocation of fixed production overhead to the costs of conversion be based on the normal capacity of the production facilities. The provisions of SFAS 151 are effective for inventory costs incurred during fiscal years beginning after June 15, 2005. We are currently evaluating the impact of SFAS 151 on our financial position, results of operations and liquidity.

In December 2004, the FASB issued SFAS No. 153, *Exchanges of Nonmonetary Assets an amendment of APB Opinion No. 29*. SFAS 153 amends the guidance in APB Opinion No. 29, *Accounting for Nonmonetary Transactions*, which is based on the principle that exchanges of nonmonetary assets should be measured based on the fair value of the assets exchanged, with certain exceptions. SFAS 153 amends APB Opinion 29 to eliminate the exception for nonmonetary exchanges of similar productive assets and replaces it with a general exception for exchanges of nonmonetary assets that do not have commercial substance. A nonmonetary exchange has commercial substance if the future cash flows of the entity are expected to change significantly as a result of the exchange. The provisions of SFAS 153 are effective for nonmonetary asset exchanges occurring in fiscal periods beginning after June 15, 2005. We do not currently believe that SFAS 153 will have a significant impact on our financial condition and results of operations.

In December 2004, the FASB issued SFAS No. 123 (revised 2004), *Share-Based Payment*. SFAS 123R is a revision of FASB SFAS 123, *Accounting for Stock-Based Compensation* and supersedes APB Opinion No. 25, *Accounting for Stock Issued to Employees*, and its related implementation guidance. Under SFAS 123(R), we will be required to measure the cost of employee services received in exchange for stock based on the grant-date fair value (with limited exceptions). That cost will be recognized over the period during which an employee is required to provide service in exchange for the award (usually the vesting period). The fair value will be estimated using an option-pricing model. SFAS 123(R) is effective as of the beginning of the first interim or annual reporting period that begins after June 15, 2005. We are currently in the process of evaluating the impact of SFAS 123(R) on our financial statements, including different option-pricing models and which transition method to select.

In March 2004, the FASB issued EITF 03-1, "The Meaning of Other-Than Temporary Impairment and Its Application to Certain Investments," which provided guidance for assessing impairment losses on investments. Additionally, EITF 03-1 includes new disclosure requirements for investments that are deemed to be temporarily impaired. In September 2004, the FASB delayed the accounting provisions of EITF 03-1; however the disclosure requirements remain effective for annual periods ending after June 15, 2004. We will evaluate the impact of EITF 03-1 once final guidance is issued.

In December 2004, FASB Staff Position No. FAS 109-2, "Accounting and Disclosure Guidance for the Foreign Earnings Repatriation Provision within the American Jobs Creation Act of 2004" (FSP FAS 109-2) was issued, providing guidance under SFAS 109, "Accounting for Income Taxes" for recording the potential impact of the repatriation provisions of the American Jobs Creation Act of 2004, enacted on October 22, 2004. FSP FAS 109-2 allows time beyond the financial reporting period of enactment to evaluate the effects of the Jobs Act before applying the requirements of FSP FAS 109-2. We are currently in the process of evaluating the potential effects of the Jobs Act and have not adjusted our tax expense or deferred tax liability to reflect the requirements of FSP FAS 109-2.

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.

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A significant portion of Harmonic's sales have been derived from sales to cable television and satellite operators, and we expect these sales to constitute a significant portion of net sales for the foreseeable future. Demand for our products will depend on the magnitude and timing of capital spending by cable television operators, satellite operators, telephone companies and broadcasters for constructing and upgrading 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 industry standards;
- delays associated with the evaluation of new services, new standards, and system architectures by many cable and satellite television operators;
- emphasis on generating revenue from existing customers by operators instead of new construction or network upgrades;
- a reduction in the amount of capital available to finance projects of our customers and potential customers;
- proposed business combinations and divestitures 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 financial difficulties of certain of our customers and changes in our customers' deployment plans adversely affected our business 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 2003. Furthermore, we believe that our net sales to satellite customers were adversely affected by the uncertainty related to the prolonged regulatory review of the proposed acquisition of DIRECTV by EchoStar in 2002, which was ultimately rejected by regulators. 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 in 2004 compared to 2003. However, 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. In addition, industry consolidation has, in the past and

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may in the future, constrain capital spending among our customers. In this regard, we believe that the proposed sale of Adelphia Communications and the recent privatization of Cox Communications have led to capital spending delays at these customers. We cannot currently predict the impact of the proposed sale of Adelphia Communications or the privatization of Cox Communications on our future sales. As a result, we cannot assure you that we will maintain or increase our net sales in the future.

Major U.S. cable operators have indicated that the substantial completion of major network upgrades, which involved 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.

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 2004, 2003, and 2002 accounted for approximately 55%, 65% and 61% 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. acquired an indirect controlling interest in Hughes Electronics, the parent company of DIRECTV in 2003. In addition, the sale or financial restructuring of companies such as Adelphia Communications and several European operators may lead to further industry consolidation. In 2004 and 2003, sales to Comcast accounted for 17% and 32%, respectively, 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 for the combined entity would have been 17% of net sales. 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 Comcast declined in 2004 compared to 2003, both in absolute dollars and as a percentage of revenues. The loss of, or any reduction in orders from, a significant customer would harm our business.

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 recognition from solution contracts which may span several quarters;
- the timing of revenue recognition on sales arrangements, which may include multiple deliverables;
- the need to replace revenue from a major project for a Japanese customer that was completed in 2004 with other domestic or international customers;
- 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;

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- the amount and timing of sales to telcos, which are particularly difficult to predict;
- 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;
- changes in our operating expenses and extraordinary expenses;
- the impact of FAS 123R, a new accounting standard which requires us to expense stock options;
- 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 compatible set top boxes, and our customers' 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 during the third quarter of 2002, the first quarter of 2003, and the third quarter of 2004, 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.

Our Future Growth Depends on Market Acceptance of Several Emerging Broadband Services, on the Adoption of New Broadband Technologies and on Several Other Broadband Industry Trends.

Future demand for our products will depend significantly on the growing market acceptance of several emerging broadband services, including digital video; VOD; HD television; very high-speed data services and voice-over-IP (VoIP) telephony.

The effective delivery of these services will depend, in part, on a variety of new network architectures, such as:

- FTTP networks;
- new video compression standards such as MPEG-4/ H.264 and Microsoft's Windows Media 9 broadcast profile (VC-1);
- the greater use of protocols such as IP; and
- the introduction of new consumer devices, such as advanced set-top boxes and personal video recorders (PVRs).

If adoption of these emerging services and/or technologies is not as widespread or as rapid as we expect, or if we are unable to develop new products based on these technologies on a timely basis, our net sales growth will be materially and adversely affected.

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Furthermore, other technological, industry and regulatory trends will affect the growth of our business. These trends include the following:

- convergence, or the desire of certain network operators to deliver a package of video, voice and data services to consumers, also known as the “triple play”;
- the use of digital video by businesses, governments and educators;
- the privatization of state-owned telcos around the world;
- efforts by regulators and governments in the U.S. and abroad to encourage the adoption of broadband and digital technologies; and
- the extent and nature of regulatory attitudes towards such issues as competition between operators, access by third parties to networks of other operators, and new services such as VoIP.

If, for instance, operators do not pursue the “triple play” as aggressively as we expect, our net sales growth would be materially and adversely affected. Similar, if our expectations regarding these and other trends are not met, our net sales may be materially and adversely affected.

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;
- fail to achieve market acceptance; or
- are ahead of the market.

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.

Our CS division is currently developing and marketing products based on new video compression standards. Encoding products based on the current MPEG-2 compression standards have represented a significant portion of the Company's sales since the acquisition of DiviCom in 2000. New standards, such as MPEG-4/ H.264 and Microsoft's Windows Media 9 broadcast profile (VC-1), are being adopted which are expected to provide significantly greater compression efficiency, thereby making more bandwidth available to operators. Harmonic is developing products based on these new standards in order to remain competitive and is devoting considerable resources to this effort. There can be no assurance that these efforts will be successful in the near future, or at all.

Our BAN division is currently marketing products for FTTP networks which telcos have begun to build. Although we believe that a number of our existing products can be deployed successfully in these networks, we will need to devote considerable resources to obtaining orders, qualifying our products and hiring knowledgeable personnel, and we may make significant financial commitments. There can be no assurance that these efforts will be successful in the near future, or at all.

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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. In this regard, our sales cycles with our current and potential telco customers are particularly unpredictable. Additionally, orders may include multiple elements, the timing of delivery of which may impact the timing of revenue recognition. Quarterly and annual results may fluctuate significantly due to revenue recognition policies and the timing of the receipt of orders. For example, revenue from two significant customer orders in the third quarter of 2004 was delayed due to these factors until the fourth quarter of 2004.

In addition, a significant portion of our revenue is derived from solution sales that principally consist of and include the system design, manufacture, test, installation and integration of equipment to the specifications of Harmonic's customers, including equipment acquired from third parties to be integrated with Harmonic's products. Revenue forecasts for solution contracts are based on the estimated timing of the system 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 U.S. in 2004, 2003 and 2002 represented 42%, 29% and 29% 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 manufacturers, 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;
- political and economic instability; and
- changes in economic policies by foreign governments

During 2004, a significant percentage of our international revenues were derived from a major upgrade by a Japanese customer of its satellite facilities. That upgrade has now been completed, and we expect sales to this customer to decline in 2005, which could adversely affect our sales to international customers.

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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.

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 U.S. 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. Any or all of these factors could adversely impact our business and results of operations.

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 recent economic recession, adverse conditions in capital markets and financial difficulties in both the service and equipment sectors, including bankruptcies. Many of our domestic and international customers accumulated significant levels of debt and announced reorganizations and financial restructurings during the past three 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. Both 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 went through bankruptcy proceedings. European digital broadcasters, such as ITV Digital, Kirsch and Quiero, also filed for protection from creditors.

While the capital market concerns about the domestic cable industry have eased, 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 Comcast/ AT&T Broadband transaction in 2002 and the acquisition by The News Corporation Ltd. in December 2003 of 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 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. More recently, restructuring of the industry has continued with the privatization of Cox Communications, the planned sale of Adelphia Communications out of bankruptcy, and the proposed sale of Cablevision's VOOM! satellite assets to Echostar. In addition, further business combinations may occur in our 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.

Changes in Telecommunications Regulations Could Harm Our Prospects And Future Sales.

Changes in telecommunications regulations in the U.S. and other countries could affect the sales of our products. In particular, regulations dealing with access by competitors to the networks of incumbent operators could slow or stop additional construction or expansion by these operators. Increased regulation of our customers' pricing or service offerings could limit their investments and consequently the sales of our products. Changes in regulations could have a material adverse effect on our business, operating results, and financial condition.

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.

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 changes to U.S. GAAP, effective for fiscal periods beginning after June 15, 2005, that will require us to record a charge to earnings for employee stock option grants and employee stock purchase plan rights. This regulation will negatively impact our earnings and may 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.

We Are Exposed To Additional Costs And Risks Associated With Complying With Increasing And New Regulation Of Corporate Governance And Disclosure Standards.

We are spending an increased amount of management time and external resources to 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. Particularly, Section 404 of the Sarbanes-Oxley Act requires management's annual review and evaluation of our internal controls over financial reporting, and attestation of the effectiveness of our internal controls over financial reporting by management and the Company's independent registered public accounting firm in connection with the filing of this annual report on Form 10-K for the fiscal year ended December 31, 2004, and with each subsequently filed annual report on Form 10-K. We have documented and tested our internal control systems and procedures and have made improvements in order for us to comply with the requirements of Section 404. This process required us to hire additional personnel and outside advisory services and has resulted in significant additional accounting and legal expenses. While our assessment of our internal controls over financial reporting resulted in our conclusion that as of December 31, 2004, our internal control over financial reporting was effective, we cannot predict the outcome of our testing in future periods. If we conclude in future periods that our internal controls over financial reporting are not effective or if our independent registered public accountants are unable to provide an unqualified opinion as of future year-ends, investors may lose confidence in our financial statements, and the price of our stock may suffer.

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. Although we generated a small net profit in 2004 after several years of losses, future profitability is 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, 2004 we had an accumulated deficit of \$1.9 billion. 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, together 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 strategic 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 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.

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

Our net sales increased approximately 36% in 2004 from 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.

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 sufficient volumes 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.

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 have been in the past adversely affected by significant provisions for excess and obsolete inventories.

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 62 employees as of December 31, 2004, 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 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 terrorist attacks and hostilities within Israel have heightened these risks. We cannot assure you that 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.

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 was particularly severe during the recent economic downturn as equipment suppliers competed aggressively for customers' reduced capital spending. Harmonic's competitors in the fiber optics systems business include corporations such as C-Cor, 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, new standards for video compression are being introduced and products based on these standards are being developed by Harmonic and certain competitors. If our competitors are successful in bringing these products to market earlier, or if these products are more technologically capable than ours, then our sales could be materially and adversely affected. 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. Also, decisions by customers to adopt new technologies or products are often delayed by extensive evaluation and qualification processes and can result in delays in sales of current 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 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. For example, we depend on LSI Logic for video encoding chips. 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. We completed the transition during the summer of 2004. Difficulties in managing relationships with current contract manufacturers, 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 negatively affect our ability to ship our products on a timely basis, which could damage relationships with current and prospective customers and harm our business. 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 in the past, were adversely affected by significant excess and obsolete inventory charges.

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 was 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, as we did during 2004, adding 33 employees. 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 May Be Materially Affected By The WEEE And RoHS Directives.

The European Union has finalized the Waste Electrical and Electronic Equipment (WEEE) directive, which regulates the collection, recovery, and recycling of waste from electrical and electronic products, and the Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive, which bans the use of

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certain hazardous materials including lead, mercury, cadmium, chromium, and halogenated flame-retardants. Under WEEE, we will be responsible for financing operations for the collection, treatment, disposal, and recycling of past and future covered products. Because the specific legal requirements have not been finalized, we are presently unable to reasonably estimate the amount of any costs that may be necessary in order to comply with WEEE. We cannot assure you that compliance with WEEE and RoHS will not have a material adverse effect on our financial condition or results of operations.

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. As of December 31, 2004, approximately \$15.8 million of pre-merger tax liabilities remained 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 11 countries. Harmonic paid a further \$5.8 million of these tax obligations in February 2005, 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 \$10.0 million pre-merger tax liability after the February 2005 payments, 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 or 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. For example, on February 25, 2005, we acquired all of the issued and outstanding shares of Broadcast Technologies Ltd., a private U.K. company. In connection with this and other acquisition transactions, we could have difficulty assimilating or retaining the acquired companies' key personnel and operations, integrating the acquired technology or products into ours or complying with internal control requirements of the Sarbanes-Oxley Act as a result of an acquisition. We also may face challenges in achieving the strategic objectives, cost savings or other benefits from these proposed acquisitions 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 or 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 (acquired by LSI Logic in June 2001) 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 has 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 current term of this agreement is through October 2005, with automatic annual renewal unless terminated by either party in accordance with the

agreement provisions. 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. If the spun-off semiconductor business is not 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.

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

We currently hold 39 issued U.S. patents and 19 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 or 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 continues to evaluate 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

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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 or cash flows.

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).

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 U.S. 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. The U.S. Court of Appeals for the Ninth Circuit heard oral arguments on February 17, 2005, but has not ruled on the appeal 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 U.S. 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 Circuit 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 or 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 or 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.

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.

Our Stock Price May Be Volatile.

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

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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.

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 net sales in 2004. In addition, the Company has various international branch offices that provide sales support and systems integration services. Periodically, Harmonic enters into foreign currency forward exchange contracts ("forward contracts") to manage exposure related to accounts receivable denominated in foreign currencies. Harmonic does not enter into derivative financial instruments for trading purposes. At December 31, 2004, we had a forward exchange contract to sell Euros totaling \$0.9 million that matures within the first quarter of 2005. 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

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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 had a material impact on financial conditions, results of operations or cash flows for either 2004 or 2003.

Item 8. Financial Statements and Supplementary Data

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rule 13a-15(f) of the Exchange Act. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate. We assessed the effectiveness of Harmonic's internal control over financial reporting as of December 31, 2004. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control — Integrated Framework. Based on our assessment using those criteria, we concluded that as of December 31, 2004, Harmonic's internal control over financial reporting was effective. Our management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2004 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears on page 48 of this Annual Report on Form 10-K.

a) Index to Consolidated Financial Statements:

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Report of Independent Registered Public Accounting Firm	48
Consolidated Balance Sheets as of December 31, 2004, and 2003	50
Consolidated Statements of Operations for the years ended December 31, 2004, 2003, and 2002	51
Consolidated Statements of Stockholders' Equity for the years ended December 31, 2004, 2003, and 2002	52
Consolidated Statements of Cash Flows for the years ended December 31, 2004, 2003, 2002	53
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b) Financial Statement Schedules:

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

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

Quarterly Data (Unaudited)

	2004				2003			
	4th	3rd	2nd	1st	4th	3rd	2nd	1st
(In thousands, except per share data)								
Quarterly Data:								
Net sales	\$85,579	\$50,610	\$57,011	\$55,106	\$56,329	\$47,253	\$ 41,653	\$ 37,041
Gross profit	39,773	20,538	22,296	21,887	22,444	14,660	12,752	10,747
Income (loss) from operations(1)	9,964	(4,161)	(1,477)	(2,890)	838	(7,611)	(12,020)	(11,752)
Net income (loss)(1)	10,158	(4,238)	(1,768)	(2,577)	1,370	(7,454)	(11,682)	(11,667)
Basic net income (loss) per share	0.14	(0.06)	(0.02)	(0.04)	0.02	(0.12)	(0.19)	(0.19)
Diluted net income (loss) per share	0.14	(0.06)	(0.02)	(0.04)	0.02	(0.12)	(0.19)	(0.19)

(1) The 2004 gross profit, income from operations and net income include credits to cost of sales of \$0.7 million, \$1.2 million, \$1.2 million, and \$1.0 million in the first, second, third and fourth quarters, respectively, for products sold during the year which had been written down in prior years.

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.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

We have completed an integrated audit of Harmonic Inc.'s 2004 consolidated financial statements and of its internal control over financial reporting as of December 31, 2004 and audits of its 2003 and 2002 consolidated financial statements in accordance with the standards of the Public Company Accounting Oversight Board (U.S.). Our opinions, based on our audits, are presented below.

Consolidated financial statements

In our opinion, the consolidated financial statements listed in the index appearing under Item 8 (a) present fairly, in all material respects, the financial position of Harmonic Inc. and its subsidiaries at December 31, 2004 and 2003, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2004 in conformity with accounting principles generally accepted in the U.S. of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (U.S.). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit of financial statements 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.

Internal control over financial reporting

Also, in our opinion, management's assessment, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 8, that the Company maintained effective internal control over financial reporting as of December 31, 2004 based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), is fairly stated, in all material respects, based on those criteria. Furthermore, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2004, based on criteria established in *Internal Control — Integrated Framework* issued by the COSO. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express opinions on management's assessment and on the effectiveness of the Company's internal control over financial reporting based on our audit. We conducted our audit of internal control over financial reporting in accordance with the standards of the Public Company Accounting Oversight Board (U.S.). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. An audit of internal control over financial reporting includes obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we consider necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinions.

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

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Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP

San Jose, California

March 15, 2005

HARMONIC INC.**CONSOLIDATED BALANCE SHEETS**

	December 31,	
	2004	2003
	(In thousands, except par value amounts)	
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 26,603	\$ 41,877
Short-term investments	74,004	70,720
Accounts receivable, net	64,148	37,909
Inventories	41,763	22,425
Prepaid expenses and other current assets	8,504	6,815
Total current assets	215,022	179,746
Property and equipment, net	19,611	23,458
Intangibles and other assets	7,723	21,522
Total assets	\$ 242,356	\$ 224,726
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	\$ 1,067	\$ 1,027
Accounts payable	22,381	14,863
Income taxes payable	7,099	6,935
Deferred revenue	15,469	11,712
Accrued liabilities	51,894	49,820
Total current liabilities	97,910	84,357
Long-term debt, less current portion	1,272	629
Accrued excess facilities costs, long-term	24,085	28,627
Other non-current liabilities	8,532	4,952
Total liabilities	131,799	118,565
Commitments and contingencies (Notes 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; 72,286 and 71,240 shares issued and outstanding	72	71
Capital in excess of par value	2,039,738	2,036,522
Accumulated deficit	(1,928,984)	(1,930,558)
Accumulated other comprehensive income (loss)	(269)	126
Total stockholders' equity	110,557	106,161
Total liabilities and stockholders' equity	\$ 242,356	\$ 224,726

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

HARMONIC INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2004	2003	2002
	(In thousands, except per share data)		
Net sales	\$248,306	\$182,276	\$186,632
Cost of sales	143,811	121,673	132,203
Gross profit	104,495	60,603	54,429
Operating expenses:			
Research and development	35,585	35,107	40,829
Selling, general and administrative	59,742	48,309	81,427
Amortization of intangibles	7,732	7,732	9,522
Total operating expenses	103,059	91,148	131,778
Income/(loss) from operations	1,436	(30,545)	(77,349)
Interest income, net	1,554	460	1,096
Other income (expense), net	(827)	952	(165)
Income/(loss) before income taxes	2,163	(29,133)	(76,418)
Provision for income taxes	589	300	500
Net income/(loss)	\$ 1,574	\$(29,433)	\$(76,918)
Net income/(loss) per share:			
Basic	\$ 0.02	\$ (0.47)	\$ (1.29)
Diluted	\$ 0.02	\$ (0.47)	\$ (1.29)
Shares used to compute net income/(loss) per share:			
Basic	72,015	62,288	59,779
Diluted	73,043	62,288	59,779

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

HARMONIC INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock		Capital in Excess of Par Value	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Stockholders' Equity	Comprehensive Income (Loss)
	Shares	Amount					
(In thousands)							
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							\$ <u>(77,063)</u>
Stock-based compensation	—	—	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, net of tax	—	—	—	—	61	61	61
Currency translation	—	—	—	—	51	51	51
Comprehensive loss							\$ <u>(29,321)</u>
Stock-based compensation	—	—	49	—	—	49	
Issuance of Common Stock under option and purchase plans	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	
Net income	—	—	—	1,574	—	1,574	\$ 1,574
Unrealized loss on investments, net of tax	—	—	—	—	(287)	(287)	(287)
Currency translation	—	—	—	—	(108)	(108)	(108)
Comprehensive income							\$ <u>1,179</u>
Stock-based compensation	—	—	23	—	—	23	
Issuance of Common Stock under option and purchase plans	1,046	1	3,193	—	—	3,194	
Balance at December 31, 2004	72,286	\$ 72	\$2,039,738	\$(1,928,984)	\$ (269)	\$ 110,557	

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

HARMONIC INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2004	2003	2002
	(In thousands)		
Cash flows from operating activities:			
Net income (loss)	\$ 1,574	\$(29,433)	\$(76,918)
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
Amortization of intangibles	13,894	13,894	18,648
Depreciation and amortization	9,408	12,274	15,735
Stock-based compensation	23	49	422
Benefit from excess and obsolete inventories	(4,037)	(4,672)	(6,932)
Impairment and loss on disposal of fixed assets	1,002	88	856
Deferred income taxes	—	—	156
Changes in assets and liabilities:			
Accounts receivable	(26,490)	(13,598)	8,246
Inventories	(15,296)	8,188	11,907
Prepaid expenses and other assets	(1,804)	(355)	4,629
Accounts payable	7,518	7,605	(3,038)
Deferred revenue	6,160	2,743	2,390
Income taxes payable	339	—	4,126
Accrued and other liabilities	3,933	4,585	(4,383)
Accrued excess facilities costs	(5,246)	(6,927)	18,752
Net cash used in operating activities	(9,022)	(5,559)	(5,404)
Cash flows used in investing activities:			
Purchases of investments	(85,457)	(67,914)	(27,874)
Proceeds from sales of investments	81,710	24,909	18,498
Acquisition of property and equipment, net	(6,318)	(3,364)	(3,292)
Net cash used in investing activities	(10,065)	(46,369)	(12,668)
Cash flows from financing activities:			
Proceeds from issuance of common stock, net	3,194	73,251	3,770
Borrowings under bank line and term loan	1,904	1,001	1,274
Repayments under bank line and term loan	(1,221)	(1,917)	(1,448)
Net cash provided by financing activities	3,877	72,335	3,596
Effect of exchange rate changes on cash and cash equivalents	(64)	(72)	13
Net increase (decrease) in cash and cash equivalents	(15,274)	20,335	(14,463)
Cash and cash equivalents at beginning of period	41,877	21,542	36,005
Cash and cash equivalents at end of period	\$ 26,603	\$ 41,877	\$ 21,542
Supplemental disclosure of cash flow information:			
Income tax payments (refunds), net	\$ 479	\$ 211	\$ (3,759)
Interest paid during the period	\$ 103	\$ 154	\$ 307

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).

Prior to 1997, 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, 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 accumulated other comprehensive income (loss). 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.

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

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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.

Revenue Recognition. Harmonic's principal sources of revenue are from hardware products, software products, solution sales, services and hardware and software maintenance agreements. 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 related solutions sales, which are discussed below, is generally recognized upon shipment, or once all applicable criteria have been met. Allowances are provided for estimated returns, discounts and trade-ins. 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, including equipment 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.

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 unrecognized revenue portion of maintenance agreements billed is recorded as deferred revenue.

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 and when revenue recognition criteria are met. 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.

Revenue on software products and software-related elements are recognized, in accordance with SOP No. 97-2, "Software Revenue Recognition." For arrangements that include both hardware products and software products, Harmonic evaluates the arrangement based on EITF 03-5, "*Applicability of AICPA Statement of Position 97-2 to Non-Software Deliverables in an Arrangement Containing More-Than-Incidental Software.*" In accordance with the provisions of EITF 03-5, the arrangement is divided between software-related elements and non-software deliverables. Software-related elements are accounted for as software. Software-related elements include all non-software deliverables for which a software deliverable is essential to its functionality. When software arrangements contain multiple elements and vendor specific objective evidence of fair value exists for all undelivered elements, Harmonic accounts for the delivered elements in accordance with the "Residual Method" prescribed by SOP No. 98-9. Fair value of software related elements is based on separate sales of renewals to other customers or upon renewal rates quoted in contracts when the quoted renewal rates are deemed to be substantive.

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.

Revenue from distributors and system integrators is recognized on delivery provided criteria for revenue recognition has been met. The Company accrues for sales returns and other allowances based on its historical experience.

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, 2004, 2003 and 2002 were \$9.4 million, \$12.3 million and \$15.7 million, respectively. As a result of a verification in 2004 the Company wrote-off approximately \$0.8 million in net book value.

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 determined 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 incurred.

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.

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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 accumulated 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. Realized gains and losses on foreign currency transactions are recorded in other income/(expense) and have been insignificant for all periods presented.

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 2004, 2003 and 2002, 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,		
	2004	2003	2002
	(In thousands, except per share data)		
Net income (loss) as reported	\$ 1,574	\$ (29,433)	\$ (76,918)
Deduct: Employee stock expense included in net income (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	(11,240)	(10,539)	(13,216)
Pro forma net loss	\$ (9,666)	\$ (39,972)	\$ (89,762)
Basic and Diluted net income (loss) per share:			
As reported	\$ 0.02	\$ (0.47)	\$ (1.29)
Pro forma	\$ (0.13)	\$ (0.64)	\$ (1.50)

The fair value of each 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		
	2004	2003	2002	2004	2003	2002
Dividend yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volatility	123%	126%	122%	87%	131%	139%
Risk-free interest rate	2.3%	2.3%	3.2%	2.2%	1.7%	3.4%
Expected life (years)	3.5	3.6	3.4	1.3	1.3	1.4

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 exchange contracts") to manage exposure related to accounts receivable denominated in foreign currencies. The Company does not enter into derivative financial instruments for trading purposes. At December 31, 2004, the Company had a forward exchange contract to sell Euros totaling \$0.9 million. The foreign exchange contract at the end of 2004 matures within the first quarter of 2005 and the fair value of this contract was approximately \$0.9 million as of December 31, 2004. Harmonic had no forward contracts outstanding as of December 31, 2003.

Reclassification. Certain amounts in prior years' financial statements and related notes have been reclassified to conform to the 2004 presentation. These reclassifications have no material impact on previously reported net (loss), cash flows or total stockholders' equity.

Note 2: Recent Accounting Pronouncements

In November 2004, the Financial Accounting Standards Board, or FASB, issued SFAS No. 151, *Inventory Costs*, to amend the guidance in Chapter 4, *Inventory Pricing*, of FASB Accounting Research Bulletin No. 43, *Restatement and Revision of Accounting Research Bulletins*. SFAS 151 clarifies the accounting for abnormal amounts of idle facility expense, freight, handling costs, and wasted material (spoilage) and requires these costs be treated as current period charges. Additionally, SFAS 151 requires that allocation of fixed production overhead to the costs of conversion be based on the normal capacity of the production facilities. The provisions of SFAS 151 are effective for inventory costs incurred during fiscal years beginning after June 15, 2005. The Company is currently evaluating the impact of SFAS 151 on its financial position, results of operations and liquidity.

In December 2004, the FASB issued SFAS No. 153, *Exchanges of Nonmonetary Assets an amendment of APB Opinion No. 29*. SFAS 153 amends the guidance in APB Opinion No. 29, *Accounting for Nonmonetary Transactions*, which is based on the principle that exchanges of non-monetary assets should be measured based on the fair value of the assets exchanged, with certain exceptions. SFAS 153 amends APB Opinion 29 to eliminate the exception for nonmonetary exchanges of similar productive assets and replaces it with a general exception for exchanges of nonmonetary assets that do not have commercial substance. A nonmonetary exchange has commercial substance if the future cash flows of the entity are expected to change significantly as a result of the exchange. The provisions of SFAS 153 are effective for nonmonetary asset exchanges occurring in fiscal periods beginning after June 15, 2005. The Company does not currently believe that SFAS 153 will have a significant impact on its financial condition and results of operations.

In December 2004, the FASB issued SFAS No. 123 (revised 2004), *Share-Based Payment*. SFAS 123R is a revision of FASB SFAS 123, *Accounting for Stock-Based Compensation* and supersedes APB Opinion No. 25, *Accounting for Stock Issued to Employees*, and its related implementation guidance. Under SFAS 123(R), the Company will be required to measure the cost of employee services received in exchange for stock based on the grant-date fair value (with limited exceptions). That cost will be recognized over the period during which an employee is required to provide service in exchange for the award (usually the vesting period). The fair value will be estimated using an option-pricing model. SFAS 123(R) is effective as of the beginning of the first interim or annual reporting period that begins after June 15, 2005. The Company is currently in the process of evaluating the impact of SFAS 123(R) on its financial statements, including different option-pricing models and which transition method to select.

In March 2004, the FASB issued EITF 03-1, "The Meaning of Other-Than Temporary Impairment and Its Application to Certain Investments," which provided guidance for assessing impairment losses on investments. Additionally, EITF 03-1 includes new disclosure requirements for investments that are deemed to be temporarily impaired. In September 2004, the FASB delayed the accounting provisions of EITF 03-1; however the disclosure requirements remain effective for annual periods ending after June 15, 2004. The Company will evaluate the impact of EITF 03-1 once final guidance is issued.

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In December 2004, FASB Staff Position No. FAS 109-2, "Accounting and Disclosure Guidance for the Foreign Earnings Repatriation Provision within the American Jobs Creation Act of 2004" (FSP FAS 109-2) was issued, providing guidance under SFAS 109, "Accounting for Income Taxes" for recording the potential impact of the repatriation provisions of the American Jobs Creation Act of 2004, enacted on October 22, 2004. FSP FAS 109-2 allows time beyond the financial reporting period of enactment to evaluate the effects of the Jobs Act before applying the requirements of FSP FAS 109-2. The Company is currently in the process of evaluating the potential effects of the Jobs Act and has not adjusted its tax expense or deferred tax liability to reflect the requirements of FSP FAS 109-2.

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, 2003 and 2004. 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.

For the years ended December 31, 2004, 2003 and 2002, the Company recorded a total of \$13.9 million, \$13.9 million and \$18.7 million, respectively, of amortization expense for identified intangibles, of which \$6.2 million, \$6.2 million and \$9.1 million, respectively, was included in cost of sales. Estimated future amortization expense for identified intangibles is \$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, 2004 and December 31, 2003:

	December 31, 2004			December 31, 2003		
	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	\$ (27,220)	\$ 1,839	\$29,059	\$ (21,703)	\$ 7,356
Customer base	33,295	(31,000)	2,295	33,295	(24,112)	9,183
Trademark and tradename	4,076	(3,794)	282	4,076	(2,949)	1,127
Supply agreement	3,107	(2,892)	215	3,107	(2,248)	859
Subtotal of identified intangibles	69,537	(64,906)	4,631	69,537	(51,012)	18,525
Goodwill	1,780	—	1,780	1,780	—	1,780
Total goodwill and other intangibles	\$ 71,317	\$ (64,906)	\$ 6,411	\$71,317	\$ (51,012)	\$ 20,305

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.

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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 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 were 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, 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. As of December 31, 2004, accrued excess facilities cost totaled \$29.4 million of which \$5.3 million was included in current accrued liabilities and \$24.1 million in other non-current liabilities. The Company incurred cash outlays of \$5.2 million, net of \$0.1 million of sublease income, during 2004 principally for lease payments, property taxes, insurance and other maintenance fees related to vacated facilities. In 2005, Harmonic expects to pay approximately \$5.3 million of excess facility lease costs, net of estimated sublease income, and to pay the remaining \$24.1 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. The Company removed approximately 12,000 square feet of space from the excess facilities portfolio in order to eliminate a third-party offsite storage arrangement. Based on the remaining lease term of 84 months, this removal resulted in a reduction of \$3.3 million in the required excess facilities reserve. 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. The deferred rent liability was not adjusted for the change in lease term resulting in an understatement of rent expense and the deferred rent liability at December 31, 2001, 2002 and 2003. 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 2003.

If facilities rental rates continue to decrease in these markets or if it takes longer than expected to sublease these facilities, the maximum amount by which the actual loss could exceed the December 31, 2004 balance is approximately \$0.8 million.

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The following table summarizes restructuring activities:

	Workforce Reduction	Excess Facilities	Total
	(In thousands)		
Balance at January 1, 2003	\$ 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
Provisions	—	—	—
Cash payments, net of sublease income	(34)	(5,246)	(5,280)
Balance at December 31, 2004	\$ —	\$ 29,421	\$29,421

Note 5: Cash, Cash Equivalents and Investments

At December 31, 2004 and 2003, cash, cash equivalents and short-term investments are summarized as follows:

	December 31,	
	2004	2003
	(In thousands)	
Cash and cash equivalents	\$ 26,603	\$ 41,877
Short-term investments:		
Less than one year	49,373	38,031
Due in 1-2 years	24,631	32,689
Total short-term investments	74,004	70,720
Total cash, cash equivalents and short-term investments	\$100,607	\$112,597

The following is a summary of available-for-sale securities (in thousands).

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
December 31, 2004				
U.S. government debt securities	\$ 23,526	—	\$ (111)	\$23,415
Corporate debt securities	43,341	—	(252)	43,089
Other debt securities	7,500	—	—	7,500
Total	\$ 74,367	—	\$ (363)	\$74,004
December 31, 2003				
U.S. government debt securities	\$ 12,988	\$ 70	—	\$13,058
Corporate debt securities	23,932	40	\$ (10)	23,962
Other debt securities	33,700	—	—	33,700
Total	\$ 70,620	\$ 110	\$ (10)	\$70,720

The decline in value of these investments is primarily related to changes in interest rates and is considered to be temporary in nature.

Note 6: Accounts Receivable and Allowances for Doubtful Accounts, Returns, Discounts and Trade-Ins

	December 31,	
	2004	2003
	(In thousands)	
Accounts receivable	\$69,274	\$43,227
Less: allowance for doubtful accounts, returns and discounts	(5,126)	(5,318)
	<u>\$64,148</u>	<u>\$37,909</u>

Trade accounts receivable are recorded at invoiced amounts and do not bear interest. 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, 2004, receivables from two customers represented 22% and 12% of total receivables. At December 31, 2003, receivables from two customers represented 21% and 14% of total receivables.

The following is a summary of activities in allowances for doubtful accounts, returns and discounts for the periods indicated (in thousands):

	Balance at Beginning of Period	Charges to Revenue	Charges to Expense	Deduction from Reserves	Balance at End of Period
	(In thousands)				
2004	\$ 5,318	\$ 5,336	\$ (242)	\$ (5,286)	\$ 5,126
2003	6,641	2,721	(4,269)	225	5,318
2002	\$ 8,595	\$ 2,272	\$ 3,576	\$ (7,802)	\$ 6,641

Note 7: Balance Sheet Details

	December 31,	
	2004	2003
	(In thousands)	
Inventories:		
Raw materials	\$ 13,171	\$ 9,594
Work-in-process	4,085	1,135
Finished goods	24,507	11,696
	<u>\$ 41,763</u>	<u>\$ 22,425</u>
Property and equipment:		
Furniture and fixtures	\$ 6,856	\$ 7,470
Machinery and equipment	52,148	84,261
Leasehold improvements	26,354	25,792
	85,358	117,523
Less: accumulated depreciation and amortization	(65,747)	(94,065)
	<u>\$ 19,611</u>	<u>\$ 23,458</u>
Intangibles and other assets:		
Identified intangibles, net of amortization	\$ 4,631	\$ 18,525
Goodwill	1,780	1,780
Other assets	1,312	1,217
	<u>\$ 7,723</u>	<u>\$ 21,522</u>
Accrued liabilities:		
Pre-merger tax liability and other taxes	\$ 19,827	\$ 25,029
Accrued compensation	13,710	6,356
Accrued warranty	5,429	4,886
Accrued excess facilities costs — current	5,336	6,040
Capital lease obligations — current	84	—
Other	7,508	7,509
	<u>\$ 51,894</u>	<u>\$ 49,820</u>
Other non-current liabilities		
Deferred rent liability	\$ 5,967	\$ 4,952
Deferred revenue	2,403	—
Capital lease obligations	162	—
	<u>\$ 8,532</u>	<u>\$ 4,952</u>

Note 8: Net Loss Per Share

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. Diluted net loss per share is the same as the basic net loss per share for 2003 and 2002 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 2004, 2003 and 2002, 6,974,215, 6,977,019 and 7,418,456 of weighted average antidilutive securities, including options, were excluded from the net income (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,		
	2004	2003	2002
	(In thousands, except per share data)		
Net income (loss) (numerator)	\$ 1,574	\$ (29,433)	\$ (76,918)
Shares calculation (denominator):			
Weighted average shares outstanding — basic	72,015	62,288	59,779
Effect of Dilutive Securities:			
Potential Common Stock relating to stock options	1,028	—	—
Average shares outstanding — diluted	73,043	62,288	59,779
Net income (loss) per share — basic	\$ 0.02	\$ (0.47)	\$ (1.29)
Net income (loss) per share — diluted	\$ 0.02	\$ (0.47)	\$ (1.29)

Note 9: 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 approximately \$14.0 million, including \$4.0 million for equipment under a secured term loan. This facility, which was amended and restated in December 2004, expires in December 2005, 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 \$50.0 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, 2004, Harmonic was in compliance with the covenants under this line of credit facility. The December 2004 amendment resulted in the company paying a fee of approximately \$25 thousand and requires payment of approximately \$37 thousand of additional fees if the company does not maintain an unrestricted deposit of \$20.0 million with the bank. Future borrowings pursuant to the line bear interest at the bank's prime rate (5.25% as of December 31, 2004) or prime plus 0.5% for equipment borrowings. Borrowings are payable monthly and are collateralized by all of Harmonic's assets. As of December 31, 2004, \$2.3 million was outstanding under the equipment term loan portion of this facility and \$1.9 million was borrowed during 2004. The term loan is payable monthly, including principal and interest at 5.75% per annum on outstanding borrowings as of December 31, 2004 and matures at various dates through December 2007. Other than standby letters of credit and guarantees (Note 15), there were no other outstanding borrowings or commitments under the line of credit facility as of December 31, 2004.

Note 10: 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 11: Benefit Plans

Stock Option Plans. Harmonic has reserved 13,115,000 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.

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, 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
Shares authorized	2,500	—	—
Options granted	(1,583)	1,583	8.66
Options exercised	—	(272)	5.16
Options canceled	282	(282)	14.12
Options expired	—	(36)	31.49
Balance at December 31, 2004	4,603	8,940	\$ 13.64

The following table summarizes information regarding stock options outstanding at December 31, 2004:

Range of Exercise Prices	Stock Options Outstanding			Stock Options Exercisable		
	Number Outstanding at December 31, 2004	Weighted-Average Remaining Contractual Life (Years)	Weighted-Average Exercise Price	Number Exercisable at December 31, 2004	Weighted Average Exercise Price	
	(In thousands, except exercise price and life)					
\$ 1.23– 4.17	1,367	8.0	\$ 3.41	662	\$ 3.39	
4.41– 8.65	1,314	5.2	7.03	995	7.06	
8.68– 9.13	2,000	7.3	9.03	1,104	9.11	
9.25– 10.44	1,794	6.9	10.16	1,088	10.38	
10.48– 23.57	1,578	5.6	20.97	1,510	21.35	
23.75– 50.72	601	4.5	28.90	601	28.90	
53.02–121.68	286	5.1	74.56	286	74.56	
	8,940	6.5	\$ 13.64	6,246	\$ 16.26	

The weighted-average fair value of options granted was \$6.42, \$2.74, and \$7.24 for 2004, 2003, and 2002, 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. In May 2004, Harmonic's stockholders approved an amendment to the 2002 Purchase Plan and increased the maximum number of shares of common stock authorized for issuance over the term of the 2002 Purchase Plan by an additional 2,000,000 shares to 3,500,000 shares. The 2002 Purchase Plan 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 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 2004, 2003, and 2002, the number of shares of stock issued under the purchase plans were 774,683, 725,086, and 780,670 shares at weighted average prices of \$2.32, \$2.24, and \$3.99, respectively. The weighted-average fair value of each right to purchase shares of common stock granted under the purchase plans were \$2.68, \$2.15, and \$5.21 for 2004, 2003, and 2002, respectively. At December 31, 2004, 2,000,231 shares were reserved for future issuances under the 2002 Purchase Plan.

Retirement/ Savings Plan. Harmonic has a retirement/savings plan that 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 \$0.3 million in 2004, \$0.2 million in 2003, and \$0.3 million in 2002.

Note 12: Income Taxes

The provision for income taxes consists of the following:

	December 31,		
	2004	2003	2002
(In thousands)			
Current:			
Federal	\$ —	\$ —	\$ —
Foreign	589	300	279
State	—	—	65
	<u>589</u>	<u>300</u>	<u>344</u>
Deferred:			
Federal	—	—	156
Foreign	—	—	—
State	—	—	—
	<u>—</u>	<u>—</u>	<u>156</u>
	<u>\$589</u>	<u>\$300</u>	<u>\$500</u>

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,		
	2004	2003	2002
(In thousands)			
Provision for (benefit from) income taxes at statutory rate	\$ 757	\$(10,161)	\$(26,746)
Differential in rates on foreign earnings	(86)	92	315
State taxes, net of federal benefit	(534)	(694)	(4,620)
Foreign losses for which no benefit is taken	442	233	868
Research and development credit	(825)	(551)	(5,700)
Valuation allowance	668	11,091	41,883
Non-deductible meals and entertainment	144	123	100
Other	23	167	(5,600)
Net provision for income taxes	<u>\$ 589</u>	<u>\$ 300</u>	<u>\$ 500</u>

Deferred tax assets (liabilities) comprise the following:

	December 31,		
	2004	2003	2002
(In thousands)			
Deferred tax assets:			
Reserves and accruals	\$ 33,491	\$ 41,219	\$ 52,121
Net operating loss carryovers	67,484	64,918	48,128
Depreciation and amortization	3,921	4,445	4,613
Research and development credit carryovers	12,474	12,408	10,898
Other	7,377	8,182	2,440
Total deferred tax assets	124,747	131,172	118,200
Valuation allowance	(122,924)	(123,615)	(104,909)
Net deferred tax assets	1,823	7,557	13,291
Deferred tax liabilities:			
Intangibles	(1,823)	(7,557)	(13,291)
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 decreased by \$0.7 million and increased by \$18.7 million and \$41.9 million for the years ended December 31, 2004, 2003 and 2002, respectively.

As of December 31, 2004, the Company had tax net operating loss carryforwards for federal income tax purposes of approximately \$186.0 million, which expire beginning in the year 2020. The Company also has state net operating loss carryforwards of approximately \$42.0 million, which expire beginning in 2005. As of December 31, 2004, the Company also had federal and state tax credit carryovers of approximately \$7.6 million and \$8.7 million, respectively, available to offset future taxable income. The federal credits expire beginning 2005, 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 as of December 31, 2004. Approximately \$15.8 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 2005. These amounts have been included in accrued liabilities.

Note 13: 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

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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, 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,		
	2004	2003	2002
	(In thousands)		
Net sales:			
Convergent Systems (CS)	\$171,410	\$113,207	\$109,718
Broadband Access Networks (BAN)	76,896	69,069	76,914
Total net sales	\$248,306	\$182,276	\$186,632
	Year Ended December 31,		
	2004	2003	2002
	(In thousands)		
Income (loss) from segment operations:			
Convergent Systems	\$ 26,427	\$ (4,398)	\$(15,649)
Broadband Access Networks	8,110	1,102	(4,033)
Income (loss) from segment operations	34,537	(3,296)	(19,682)
Amortization of intangibles	(13,894)	(13,894)	(18,648)
Interest and other income, net	727	1,412	931
Facilities adjustments	—	1,376	(22,500)
Corporate expenses and eliminations	(19,207)	(14,731)	(16,519)
Income (loss) before income taxes	\$ 2,163	\$(29,133)	\$(76,418)

Geographic Information:

	Year Ended December 31,		
	2004	2003	2002
	(In thousands)		
Net sales:			
United States	\$143,818	\$130,226	\$133,222
International	104,488	52,050	53,410
Total	\$248,306	\$182,276	\$186,632
Property, equipment and intangibles:			
United States	\$ 24,141	\$ 41,905	\$ 64,863
International	1,881	1,858	1,792
Total	\$ 26,022	\$ 43,763	\$ 66,655

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 2004, sales to Comcast accounted for 17% of net sales. 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.

Note 14: Related Party

A director of Harmonic since January 2002 is a director of Terayon Communications, with whom the Company signed a reseller agreement for certain products during the second quarter of 2002. During 2004 and 2003, the Company purchased approximately \$7.0 million and \$3.0 million, respectively, in products from Terayon. As of December 31, 2004 and 2003, Harmonic had liabilities to Terayon of approximately \$0.2 million and \$0.3 million, respectively, for inventory purchases.

Note 15: 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):

	2004	2003
Balance as of January 1	\$ 4,886	\$ 5,866
Accrual for warranties	5,715	4,602
Warranty costs incurred	(5,172)	(5,582)
Balance as of December 31	<u>\$ 5,429</u>	<u>\$ 4,886</u>

Standby Letters of Credit. As of December 31, 2004 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 \$1.5 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, 2004.

Guarantees. As of December 31, 2004, Harmonic had no other guarantees outstanding.

Note 16: 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 \$11.5 million, \$10.4 million and \$11.5 million for 2004, 2003 and 2002, respectively. Future minimum lease payments under noncancelable operating leases at December 31, 2004, are as follows (in thousands):

2005	\$10,191
2006	11,253
2007	12,465
2008	12,565
2009	12,876
Thereafter	<u>9,672</u>
	<u>\$69,022</u>

As of December 31, 2004, \$28.4 million of these lease costs were recorded as accrued excess facility costs. See Note 4 "Restructuring, Excess Facilities and Inventory Provisions."

Derivative Financial Instruments. We enter into foreign currency forward exchange contracts (“forward exchange contracts”) to manage exposure related to accounts receivable denominated in foreign currencies. A majority of sales are currently made in U.S. dollars. The Company does not enter into derivative financial instruments for trading purposes. Gains and losses on the contracts are included in other income (expense) in our Consolidated Statements of Operations. At December 31, 2004, the Company had a forward exchange contract to sell Euros totaling \$0.9 million. The foreign exchange contract at the end of 2004 matures within the first quarter of 2005 and the fair value of this contract was approximately \$0.9 million as of December 31, 2004.

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 2004, 2003 and 2002 royalty expenses were \$0.7 million, \$0.6 million and \$0.6 million, respectively.

Purchase Commitments with Contract Manufacturers and Suppliers. The Company relies on a limited number of 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 17: 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 U.S. 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. The U.S. Court of Appeals for the Ninth Circuit heard oral arguments on February 17, 2005, but has not ruled on the appeal yet.

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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 U.S. 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 Circuit 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 actions, 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 or 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 or cash flows.

Harmonic is involved in other litigation and may be subject to claims arising in the normal course of business. In the opinion of management the amount of ultimate liability with respect to these matters in the aggregate will not have a material adverse effect on the Company or its operating results, financial position or cash flows.

Note 18: Subsequent Event

On February 25, 2005, Harmonic purchased all of the issued and outstanding shares of Broadcast Technology Ltd., a private U.K. company, for a purchase consideration of £4.0 million, or approximately \$7.6 million. The purchase consideration consists of a payment of £3.0 million in cash and the issuance of 169,112 shares of Harmonic common stock. Broadcast Technology Ltd. develops, manufactures and distributes professional video/ audio receivers and decoders.

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

None.

Item 9A. Controls and Procedures

Evaluation of disclosure controls and procedures.

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 the end of the period covered by this annual report, and have concluded that our disclosure controls and procedures were effective as of this date based on their evaluation of these controls and procedures required by paragraph (b) of Exchange Act Rules 13a-15 or 15d-15.

Changes in internal controls over financial reporting.

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Exchange Act Rules 13a-15 or 15d-15 that occurred during the fourth quarter of the fiscal year ended December 31, 2004 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 Annual Report on Form 10-K pursuant to Instruction G to Exchange Act Form 10-K, and the Registrant will file its definitive Proxy Statement for its 2005 Annual Meeting of Stockholders, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the "2005 Proxy Statement"), not later than 120 days after the end of the fiscal year covered by this Report, and certain information included in the 2005 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 2005 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 2005 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 2005 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 other senior operational and financial management. The Code is available on the Company's website at www.harmonicinc.com.

Harmonic intends to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of this Code of Ethic 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 2005 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 2005 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 2005 Proxy Statement in the section titled, "Independent Registered Public Accounting Firm," under the captions, "Audit Fee," "Audit Related Fees," "Tax Fees," "All Other Fees" and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

- (1) *Financial Statements.* See Index to Consolidated Financial Statements at Item 8 on page 46 of this Annual Report on Form 10-K:
- (2) *Financial Statement Schedules.* Financial statement schedules have been omitted because the information is not required to be set forth herein, is not applicable or is included in the financial statements or notes thereto.
- (3) *Exhibits.* The documents listed in the Exhibit Index of this Annual Report on Form 10-K are filed herewith or are incorporated by reference in this Annual Report on Form 10-K, in each case as indicated herein.

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 15, 2005.

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:

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ ANTHONY J. LEY</u> (Anthony J. Ley)	Chairman, President & Chief Executive Officer (Principal Executive Officer)	March 15, 2005
<u>/s/ ROBIN N. DICKSON</u> (Robin N. Dickson)	Chief Financial Officer (Principal Financial and Accounting Officer)	March 15, 2005
<u>/s/ E. FLOYD KVAMME</u> (E. Floyd Kvamme)	Director	March 15, 2005
<u>/s/ WILLIAM REDDERSEN</u> (William Reddersen)	Director	March 15, 2005
<u>/s/ LEWIS SOLOMON</u> (Lewis Solomon)	Director	March 15, 2005
<u>/s/ MICHEL L. VAILLAUD</u> (Michel L. Vaillaud)	Director	March 15, 2005
<u>/s/ DAVID R. VAN VALKENBURG</u> (David Van Valkenburg)	Director	March 15, 2005

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.

<u>Exhibit Number</u>	
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(viii)	Certificate of Incorporation of Registrant as amended
3.2(ix)	Certificate of Designation of Rights, Preferences and Privileges of Series A Participating in Preferred Stock of Registrant
3.3(ix)	Amended and Restated Bylaws of Registrant
4.1(i)	Form of Common Stock Certificate
4.2(ix)	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(xiii)*	1995 Stock Plan and form of Stock Option Agreement, as amended
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(xii)*	Change of Control Severance Agreement dated February 20, 2004 between Registrant and Anthony J. Ley
10.10(xii)*	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(xiii)*	1999 Nonstatutory Stock Option Plan
10.13(vi)	Lease Agreement for 603-611 Baltic Way, Sunnyvale, California
10.14(vi)	Lease Agreement for 1322 Crossman Avenue, Sunnyvale, California
10.15(vi)	Lease Agreement for 646 Caribbean Drive, Sunnyvale, California
10.16(vi)	Lease Agreement for 632 Caribbean Drive, Sunnyvale, California
10.17(vi)	First Amendment to the Lease Agreement for 549 Baltic Way, Sunnyvale, California
10.18(viii)	Restated Non-Recourse Receivables Purchase Agreement dated September 25, 2001 between Registrant and Silicon Valley Bank
10.19(viii)	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(x)	Amendment to Loan Documents, dated September 26, 2003, by and between Silicon Valley Bank and Harmonic Inc.
10.22(xi)*	2002 Director Option Plan and Form of Stock Option Agreement, as amended
10.23(xiii)*	2002 Employee Stock Purchase Plan and Form of Subscription Agreement, as amended
10.24(vii)	Supply License and Development Agreement, dated as of October 27, 1999, by and between C-Cube Microsystems and Harmonic
10.25	Second Amended and Restated Loan and Security Agreement by and between Harmonic Inc., as Borrower, and Silicon Valley Bank, as Lender, dated as of December 17, 2004

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Exhibit Number	
21.1	Subsidiaries of Registrant
23.1	Consent of Independent Registered Public Accounting Firm
31.1	Certification of Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Principal Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1	Certification of 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 Report on Form 8-K dated November 1, 1999.
- (vi) 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.
- (vii) Previously filed as an Exhibit to the Company's Registration Statement on Form S-4 No. 333-33148.
- (viii) Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2001.
- (ix) Previously filed as an Exhibit to the Company's Report on Form 8-K dated July 25, 2002.
- (x) Previously filed as an Exhibit to the Company's Quarterly Report on Form 10-Q for the quarter ended September 26, 2003.
- (xi) Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2002.
- (xii) Previously filed as an Exhibit to the Company's Current Annual Report on Form 10-K for the year ended December 31, 2003.
- (xiii) Previously filed as an Exhibit to the Company's Definitive Proxy Statement dated April 21, 2004.

SECOND AMENDED AND RESTATED

LOAN AND SECURITY AGREEMENT

by and between

HARMONIC INC., AS BORROWER

and

SILICON VALLEY BANK, AS LENDER

December 17, 2004

THIS SECOND AMENDED AND RESTATED LOAN AND SECURITY AGREEMENT (as amended, restated, or otherwise modified from time to time, this "AGREEMENT"), dated as of December 17, 2004, 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. This Agreement amends and restates in its entirety that certain Amended and Restated Loan and Security Agreement, dated December 19, 2003. 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 December 16, 2005 (the "EQUIPMENT AVAILABILITY END DATE"), Bank will make advances (each, an "EQUIPMENT ADVANCE" and, collectively, "EQUIPMENT ADVANCES") not exceeding the Committed Equipment Line. The Equipment Advances may only be used to purchase or refinance Equipment within 90 days of the invoice date, or, in the case of the initial advance, purchased on or after September 1, 2004.

(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

December 19, 2003 are 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 as set forth on Schedule 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 to the Prime Rate. Equipment Advances, including the Existing Equipment Debt, accrue interest on the outstanding principal balance thereof at a per annum rate equal to one-half percentage point (0.50%) 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) 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.

2.5 FEES.

Borrower will pay:

(a) LOAN FEE. Fully earned, non-refundable loan fees in the amount of \$20,000 for the Committed Revolving Line and in the amount of \$4,800 for the Committed Equipment Line are due on or before the Closing Date. If, at any time, Borrower fails to maintain a minimum aggregate amount of \$20,000,000 of unrestricted funds on deposit for 10 consecutive Business Days with SVB Asset Management and/or SVB Securities, Borrower shall pay an additional \$30,000 fee for the Committed Revolving Line and an additional \$7,200 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

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(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 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:

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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 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

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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.

5.8 EXISTING TERM DEBT.

Schedule A accurately reflects the outstanding principal amount, 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

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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:

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 and consolidating 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 and consolidating financial statements prepared under GAAP, consistently applied, together with an opinion on the financial statements from an independent certified public

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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.

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.

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(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 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 \$50,000,000.

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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 INTENTIONALLY OMITTED.

Intentionally Omitted.

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.

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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

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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% of 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

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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

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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

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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

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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,

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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

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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.

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"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 \$2,400,000.00.

"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.

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"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

(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 16, 2005.

"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

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

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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;

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(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

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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.]

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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: /s/Robin N. Dickson

Title: Chief Financial Officer

BANK:

SILICON VALLEY BANK

By: /s/Nick Tsiagkas

Printed Name: /s/Nick Tsiagkas

Title: Relationship Manager

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, 2004:

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 REGISTERED PUBLIC ACCOUNTING FIRM

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 15, 2005, relating to the financial statements, management's assessment of the effectiveness of internal control over financial reporting and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PRICEWATERHOUSECOOPERS LLP
PRICEWATERHOUSECOOPERS LLP

San Jose, California
March 15, 2005

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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth 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.
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 15, 2005

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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth 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.
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 15, 2005

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

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:

- i. the accompanying annual report on Form 10-K for the fiscal year ended December 31, 2004, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as amended; and
- ii. the information contained in such report fairly presents, in all material respects, the financial condition and results of operations of Harmonic Inc.

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 15, 2005

/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

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:

- i. the accompanying annual report on Form 10-K for the fiscal year ended December 31, 2004, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as amended; and
- ii. the information contained in such report fairly presents, in all material respects, the financial condition and results of operations of Harmonic Inc.

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 15, 2005.

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