HARMONIC INC Form 424B5 October 29, 2003

Filed Pursuant to Rule 424(b)(5)

Registration No. 333-84430

#### PROSPECTUS SUPPLEMENT

(To Prospectus dated April 18, 2002)

### 9,000,000 Shares

### **Common Stock**

We are offering all 9,000,000 shares of common stock to be sold in this offering.

Our common stock is traded on the Nasdaq National Market under the symbol HLIT. On October 28, 2003, the last reported sale price of our common stock on the Nasdaq National Market was \$7.75 per share.

Investing in our common stock involves a high degree of risk. Before buying any shares, you should carefully read the discussion of material risks of investing in our common stock under the heading Risk factors beginning on page S-8 of this prospectus supplement and on page 7 of the accompanying prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	Per share	Total
Public offering price	\$7.400	\$66,600,000
Underwriting discounts and commissions	\$0.407	\$ 3,663,000
Proceeds, before expenses, to us	\$6.993	\$62,937,000

The underwriters may also purchase up to an additional 1,350,000 shares of common stock from us at the public offering price, less the underwriting discounts and commissions payable by us, to cover over-allotments, if any, within 30 days from the date of this prospectus supplement. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be \$4,212,450, and the total proceeds, before expenses, to us will be \$72,377,550.

The underwriters are offering the shares of our common stock as described in Underwriting. Delivery of the shares will be made on or about November 3, 2003.

Sole Book-Running Manager

#### **UBS Investment Bank**

# SoundView Technology Group Needham & Company, Inc.

The date of this prospectus supplement is October 29, 2003.

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You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide information different from that contained or incorporated by reference in this prospectus supplement or the accompanying prospectus. Neither the delivery of this prospectus supplement nor the sale of shares of common stock means that information contained or incorporated by reference in this prospectus supplement or the accompanying prospectus is correct after the date of this prospectus supplement. These documents do not constitute an offer to sell or solicitation of an offer to buy these shares of common stock in any circumstance under which the offer or solicitation is unlawful.

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Unless stated otherwise, references in this prospectus supplement to Harmonic, we, us, its or our refer to Harmonic Inc., a Delaware corpora and its subsidiaries. Each trademark, trade name or service mark of any other company appearing in this prospectus supplement or the accompanying prospectus belongs to its holder.

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### Forward-looking statements

This prospectus supplement, the accompanying prospectus and the documents incorporated herein by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. Words such as anticipates, intends. may. will. should. potential, continue, further. plans, believes. seeks, estimates, variations of such words and similar intended to identify such forward-looking statements. These statements are not guarantees of future performance and are subject to certain risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results could differ materially from those expressed or forecasted in any such forward-looking statements as a result of certain factors, including those set forth in Risk factors, as well as those noted in similar sections of the documents incorporated herein by reference. In connection with forward-looking statements that appear in these disclosures, investors should carefully review the factors set forth in this prospectus supplement and the accompanying prospectus under Risk factors.

The cautionary statements contained under the caption Risk factors and other similar statements contained elsewhere in this prospectus supplement and the accompanying prospectus, including the documents that are incorporated by reference, identify important factors with respect to such forward-looking statements, including certain risks and uncertainties that could cause our actual results, performance or achievements expressed or implied by such forward-looking statements.

Although we believe that the expectations reflected in such forward-looking statements are based upon reasonable assumptions, no assurance can be given that such expectations will be attained or that any deviations will not be material. We disclaim any obligation or undertaking to disseminate any updates or revision to any forward-looking statement contained herein to reflect any change in our expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

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### Prospectus supplement summary

This summary highlights information contained in this prospectus supplement and the accompanying prospectus. Because it is a summary, it does not contain all the information you should consider before investing in our common shares. You should read this entire prospectus supplement and the accompanying prospectus carefully, including the Risk factors section and the information incorporated by reference, before making an investment decision.

#### **OUR COMPANY**

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, high definition television, high-speed Internet access and telephony. Historically, most of our sales have been derived from sales of digital headend products and fiber optic transmission systems to cable television and satellite operators. We also derive a small portion of our sales from telephone companies that offer video services to their customers.

Our business is organized into two principal operating segments: Convergent Systems, or CS, for digital video systems, and Broadband Access Networks, or BAN, for fiber optic systems. Our CS digital video products include encoders, multiplexers and modulators that allow our customers to convert analog video to digital, as well as edge gateway products that enable operators to deliver customized broadcast or narrowcast on-demand services, such as video-on-demand, to their subscribers. Our BAN products include optical transmitters, amplifiers, dense-wave-division-multiplexing, or DWDM, systems, and nodes designed to allow operators to efficiently transmit and distribute broadband content by increasing and segmenting the bandwidth available on their networks.

#### KEY INDUSTRY DYNAMICS AFFECTING OUR BUSINESS

We participate in the worldwide market for equipment sold to communications service providers such as cable, satellite and telephone companies. Our business is influenced by the significant change occurring in our industry, including the following key issues:

- Growth and competition in the cable and satellite markets. We expect to benefit from the expected growth and competition in the cable and satellite industries by providing the network equipment required to offer advanced, video services.

  The competitive dynamics in the multi-channel video industry have been partly driven by the rivalry between direct broadcast satellite, or DBS, operators and the cable television industry. In the 1990s, DBS operators offered several hundred channels of high quality digital video before the cable television operators were able to upgrade their analog networks to offer comparable services, and the number of DBS subscribers increased significantly. More recently, cable operators began to upgrade their networks to offer comparable digital video services, as well as two-way services such as video-on-demand, high-speed data and voice services, all of which could not be effectively offered by DBS operators. In order to continue to offer a competitive service, satellite operators responded by upgrading their networks to provide additional service features to their customers, such as local programming and, more recently, high definition television, or HDTV. We expect DBS and cable television operators to continue to upgrade their networks to offer multiple, advanced services to their customers.
- Growing demand for triple play broadband services including voice, video and data. In the United States, cable television operators have been more successful than traditional telephone companies in attracting high-speed broadband customers for data services. According to the National Cable and Telecommunications Association, as of June 30, 2003, there were 13.8 million broadband data customers in the United States using cable modern service, compared to only 7.6 million customers using DSL, the broadband data service offered by telephone companies. Within the last few years, certain cable television operators have begun to offer telephony service to their customers, including a triple play bundle of services that includes voice, video and data, over a single network, with the objective of capturing higher average revenues per customer. In addition, recent advancements in Voice over

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Internet Protocol technology, or VoIP, are expected to accelerate the introduction of telephony service by cable companies.

Telephone companies are responding to the competitive threat of high-speed broadband cable service and cable triple play service, as well as the loss of telephone lines to wireless operators, by building networks to offer more compelling broadband services to their customers, including multi-channel video. Telephone companies are pursuing multiple strategies to offer video services to their customers including partnering with DBS operators, offering video services over DSL networks, and constructing fiber networks to the customer premises, otherwise known as fiber-to-the-premises, or FTTP.

We believe that we are well positioned to benefit from the growing trend of communications service providers to offer their customers a combination of voice, video and data services over a single, converged network.

- Financial recovery of the communications industry and stabilized communications equipment spending. Beginning in 2001, the communications industry in general experienced a severe downturn, which resulted in a significant reduction in capital spending on communications equipment. Many of our core customers were constrained by excessive debt and, in a few cases, were forced into bankruptcy. In addition, consolidation in the cable television and satellite industries, including merger activity involving our core customers such as DIRECTV, EchoStar, Comcast and AT&T Broadband, resulted in a temporary reduction in capital spending. We believe that the recent resolution of mergers involving some of our customers and emergence from bankruptcy by other customers helps to position them to invest more capital in their networks.
- International growth of broadband services. We believe that the competition among communications service providers to win broadband customers is also increasing in many international markets. International market dynamics vary from country to country as a result of factors such as regulation, incumbent service provider standing, population density and cultural usage patterns. In many regions, telephone companies have significantly higher broadband data penetration than cable. In addition, telephone companies in Korea, Japan and select European markets have already deployed digital video over DSL or FTTP. Cable and satellite providers are responding in many of these regions by upgrading their networks to provide improved services. For example, a large Japanese cable operator is now delivering data services at 30 Mbps to its customers. We believe that we are well positioned to deliver our digital video and fiber optic systems to service providers in many international markets to enable them to compete more effectively.

#### **OUR STRATEGY**

We believe that we are able to compete effectively with larger competitors due to our differentiated strategy, which includes the following elements:

- Focus on open standards. In contrast with the proprietary systems of some of our larger competitors, our solutions can provide our customers with reduced cost and flexibility by operating on standards-based, open platforms.
- Offer a focused portfolio of leading products. Rather than offering an end-to-end portfolio of products, which is the strategy of some of our larger competitors, we have concentrated our research and development efforts on a focused portfolio of products which provides us with a distinct competitive advantage.
- Closely collaborate with our customers to develop new services. Our long-standing relationships with customers have allowed us to collaborate in the development of new services and thereby establish leadership in key technologies such as digital video encoding, compression and fiber optic transmission.
- Leverage innovative broadband technologies and standards. We believe that our extensive expertise in compression efficiency, optics, radio frequency signal processing and system level design provides us with significant competitive advantages. For example, our core expertise in compression technology

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allows us to offer support for existing and emerging standards, such as MPEG-2, MPEG-4/ H.264 and Microsoft Windows Media 9. **OUR PRODUCTS** 

#### **Convergent Systems products**

Our digital video products enable service providers to offer their customers digital video services and also allow those operators to increase the efficiency of their broadband networks. Our compression products, which include our DiviCom encoders, provide compression of video and audio channels, which allows operators to provide high quality video and audio at low data rates, including the delivery of HDTV service. Our edge devices include our Narrowcast Services Gateway, which incorporates core functionality such as, routing, multiplexing and modulation, and allows operators to offer video-on-demand services. Our stream processing products, which include multiplexers, broadcast network gateways, and digital turnaround systems, are designed to allow operators to combine, multiplex, and manage various sources of video, audio, and data streams for efficient distribution over their networks. Our control and automation products include a full range of products, such as our NMX Digital Service Manager, that give service providers the ability to control and monitor their digital video infrastructure at an aggregate level, rather than just discrete pieces of hardware, reducing their operational costs.

#### **Broadband Access Networks products**

Our optical transmission products, node platforms, return path products and element management systems allow cable operators to deliver traditional broadcast video services while supporting the roll-out of emerging interactive services and managing the network. Our broad portfolio of optical transmitters enable cable operators to design network architectures which address the service and technical requirements of their systems. Our DWDM systems allow operators to efficiently transmit and distribute broadband content by increasing and segmenting the bandwidth available on their networks. In addition, 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. In addition, we provide installation, systems integration and technical support services to our customers worldwide.

#### **OUR CUSTOMERS AND DISTRIBUTION CHANNELS**

Our customers include Cablevision, Comcast, Cox, DIRECTV, EchoStar and Time Warner Cable in the United States, and Canal Plus, Hong Kong Cable Television and NTL outside the United States. Our end customers also include telephone companies such as Saskatchewan Telecom and Telefónica. For the six months ended June 27, 2003, our top ten customers accounted for 69% of our net sales.

In the United States, we sell our products principally through our own direct sales force, which is organized geographically and by major customers. Our direct sales force and distributors are supported by a trained technical staff including application engineers who work closely with operators to develop technical proposals and design systems that optimize system performance and economic benefits to operators. Technical support provides a customized set of services for ongoing maintenance, support-on-demand and training for our customers and distributors both in our facilities and on-site.

We sell to international customers through our own direct sales force as well as through independent distributors such as Siemens and Sumitomo.

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#### RECENT DEVELOPMENTS

On October 16, 2003, we announced results for the quarter ended September 27, 2003. Net sales were \$47.3 million and net loss was \$(7.5) million.

#### Net sales and net loss

#### Three months ended

	September 27, 2002	June 27, 2003	September 26, 2003	
	(u	naudited, in thousands)		
Harmonic				
Net sales	\$ 37,019	\$ 41,653	\$47,253	
Net loss	(38,030)	(11,682)	(7,454)	
Convergent Systems				
Net sales	23,838	27,106	28,956	
Broadband Access Networks				
Net sales	13,181	14,547	18,297	

In the three months ended September 26, 2003, we experienced increased bookings activity relative to previous quarters. We believe that this increased activity was due in general to the financial recovery of the industry and stabilized communications industry spending, and in particular to the roll-out by our customers of new services such as video-on-demand and HDTV. During this period, we also introduced our new NSG 9000 series Edge Device, which increases the performance of our VOD system; our MV450, which is a more advanced encoder than our existing encoder products; and our MV 100 encoder platform, which is capable of further increasing the compression efficiency of MPEG-2 and supporting next-generation MPEG-4/H.264 and Windows Media 9 compression standards.

#### **Balance sheet**

Our current assets were \$91.9 million as of September 26, 2003, compared to \$96.3 million as of June 27, 2003. Our current liabilities were \$74.1 million as of September 26, 2003, compared to \$77.7 million as of June 27, 2003. Our net current assets were \$17.8 million as of September 26, 2003, compared to \$18.6 million as of June 27, 2003. Our long-term debt was \$0.5 million as of September 26, 2003 and June 27, 2003. Our capital stock was \$1.965 billion as of September 26, 2003, compared to \$1.964 billion as of June 27, 2003. Our stockholders equity was \$33.2 million as of September 26, 2003, compared to \$39.9 million as of June 27, 2003.

#### **OUR CORPORATE INFORMATION**

We are incorporated in Delaware and our principal executive offices are located at 549 Baltic Way, Sunnyvale, California 94089. Our telephone number is (408) 542-2500. As of September 26, 2003, Harmonic employed a total of 558 people.

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# The offering

Common stock we are offering 9,000,000 shares

Common stock outstanding immediately 69,821,085 shares

after this offering

Nasdaq National Market symbol HLIT

Use of proceeds We expect to use the net proceeds from this offering for general corporate purposes, including the

payment of existing liabilities, research and development, the development or acquisition of new products or technologies, equipment acquisitions, general working capital and operating expenses. See

Use of proceeds.

The number of shares of common stock outstanding immediately after this offering in the table above is based on approximately 60,821,085 shares outstanding as of September 26, 2003, and does not include:

- 8,076,834 shares of common stock issuable upon exercise of outstanding options as of September 26, 2003 granted under our stock option plans, with a weighted average exercise price of \$14.39 per share;
- 4,113,205 additional shares of common stock available for future issuance under our stock option and employee stock purchase plans as of September 26, 2003; and
- 1,350,000 shares of common stock issuable upon exercise of the underwriters over-allotment option.

  Unless otherwise stated, all information contained in this prospectus supplement assumes that the underwriters do not exercise their over-allotment option.

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### Summary consolidated financial data

We have derived our consolidated statement of operations data for the years ended December 31, 2000, 2001 and 2002 from our audited consolidated financial statements included in this prospectus supplement. We have derived our consolidated statement of operations data for the years ended December 31, 1999 and 1998 from our audited consolidated financial statements not included in this prospectus supplement. We have derived our consolidated balance sheet data as of June 27, 2003 and consolidated statement of operations data for each of the six months ended June 28, 2002 and June 27, 2003 from our unaudited consolidated financial statements included in this prospectus supplement. The unaudited consolidated financial statement data include, in our opinion, all adjustments (consisting only of normal recurring adjustments) that are necessary for a fair presentation of our financial position and results of operations for these periods. Operating results for the six months ended June 27, 2003 are not necessarily indicative of the results that may be expected for the fiscal year ending December 31, 2003. In addition, due to the acquisitions we have made, our results of operations are not necessarily comparable between periods presented. You should read the summary financial data set forth below in conjunction with Management's discussion and analysis of financial condition and results of operations and with our consolidated financial statements and related notes included in this prospectus supplement.

	Year ended December 31,			Six months ended			
						June 28,	June 27,
Consolidated statement of operations data:	1998	1999	2000	2001	2002	2002	2003
			(in thousa	nds, except per sha	ore data)	(unau	dited)
Net sales	\$ 83,857	\$184,075	\$ 263,046	\$ 203.810	\$186,632	\$110,341	\$ 78,694
Gross profit <sup>(1)</sup>	30,555	80,605	75,171	1,555	54,429	34,998	23,499
Income (loss) from operations (1)(2)	(21,943)	29,017	(1,683,035)	(168,787)	(77,349)	(24,919)	(23,772)
Net income (loss) <sup>(1)</sup>	(21,453)	23,680	(1,654,008)	(166,407)	(76,918)	(25,136)	(23,349)
Basic net income (loss) per share	\$ (0.92)	\$ 0.84	\$ (34.06)	\$ (2.84)	\$ (1.29)	\$ (0.42)	\$ (0.39)
Diluted net income (loss) per share	\$ (0.92)	\$ 0.76	\$ (34.06)	\$ (2.84)	\$ (1.29)	\$ (0.42)	\$ (0.39)

(1) The six months ended June 27, 2003 gross profit, loss from operations and net loss include credits to cost of sales of \$2.1 million for products sold that had been written down in prior years. Operating expenses for the six months ended June 28, 2003 include a charge of approximately \$2.7 million related to the settlement of litigation with Power and Telephone Supply. The six months ended June 28, 2002 gross profit, loss from operations and net loss include charges of \$0.2 million as well as credits of \$2.9 million for products sold which had been written down in prior years. Operating expenses for the six months ended June 28, 2002 include a charge to operating expenses of \$2.7 million for probable losses on receivables for Adelphia Communications. Loss from operations for the six months ended June 27, 2003 and June 28, 2002 include amortization of intangible assets of \$6.9 million and \$11.7 million, respectively.

The year ended December 31, 2002 gross profit, loss from operations and net loss include 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 which had been written down in prior years. For the year ended December 31, 2002, 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 for Adelphia Communications, and severance and other costs of \$0.9 million.

The 2001 gross profit, loss from operations and net loss include 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 include 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.

The 1998 loss from operations and net loss include a charge to operating expenses of \$14.0 million for acquired in-process technology.

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

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As of June 27, 2003

Consolidated balance sheet data:	Actual	As adjusted <sup>(1)</sup>
	(unaudite	d, in thousands)
Cash, cash equivalents and short-term investments	\$ 36,310	\$ 98,297
Working capital	18,609	80,596
Total assets	151,956	213,943
Long term debt, including current portion	1,810	1,810
Stockholders equity	39,863	101,850

(1) Adjusted to give effect to the sale of our common stock in this offering and our receipt of the estimated net proceeds of that sale.

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### Risk factors

You should carefully consider the following factors and other information in this prospectus supplement and the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus before deciding to invest in our common stock. You should also consider carefully the other information contained, or incorporated by reference, in this prospectus supplement or the accompanying prospectus. The actual results of our business could differ materially from those described as a result of the risks and uncertainties described below and elsewhere. In such case, the trading price of our common stock could decline, and you may lose all or part of your investment.

We depend on cable and satellite industry capital spending for a substantial portion of our revenue and any decrease or delay in capital spending in these industries would negatively impact our resources, operating results and financial condition and cash flows.

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

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

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

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

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

#### **Risk factors**

The prolonged economic recession, the financial difficulties of certain of our customers and changes in our customers deployment plans adversely affected our business in the latter part of 2001, throughout 2002 and in the first half of 2003. Two of our major domestic customers, Adelphia Communications and Winfirst, declared bankruptcy during the first half of 2002, while NTL, a major international customer, emerged from bankruptcy in early 2002. Furthermore, we believe that our net sales to satellite customers were adversely affected by the uncertainty related to the prolonged regulatory review of the proposed acquisition of DIRECTV by Echostar in 2002. These events, coupled with uncertain and volatile capital markets, also pressured the market values of domestic cable operators and restricted their access to capital. This reduced access to funding for new and existing customers caused delays in the timing and scale of deployments of our equipment and also resulted in the postponement or cancellation of certain projects by our customers. Several customers also canceled new projects or delayed new orders to allow them to reduce inventory levels that were in excess of their deployment requirements. We believe that these factors contributed to decreased net sales in both our CS division and our BAN division during the second half of 2002 and the first half of 2003 compared to the first half of 2002.

We believe that the financial condition of many of our customers has stabilized or improved, and our net sales increased sequentially in both the second and third quarters of 2003. However, despite the improvement, our quarterly net sales during the second and third quarters of 2003 were lower than during the first and second quarters of 2002, and European spending remains generally weak. Furthermore, another economic downturn or other factors could cause additional financial difficulties among our customers, and customers whose financial condition has stabilized may not purchase new equipment at levels we have seen in the past. Continued financial difficulties among our customers would adversely affect our operating results and financial condition. Also, News Corp. Ltd. recently announced its plan to acquire a controlling interest in Hughes Electronics, the parent company of DIRECTV, subject to certain regulatory and shareholder approvals. We cannot currently predict the impact of the announcement by News Corp. Ltd. to acquire control of DIRECTV, and the related industry uncertainty, on our future sales. As a result, we cannot assure you that the sequential net sales growth we had during the second and third quarters of 2003 will continue.

Our customer base is concentrated and the loss of one or more of our key customers would harm our business. The loss of any key customer would have a negative effect on our business.

Historically, a majority of our sales have been to relatively few customers, and due in part to the consolidation of ownership of cable television and direct broadcast satellite systems, we expect this customer concentration to continue in the foreseeable future. Sales to our ten largest customers in 2001, 2002, and the first half of 2003 accounted for approximately 49%, 61% and 69% 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 US cable operator, reaching approximately 21 million subscribers. In the DBS segment, News Corp. Ltd. recently announced its plan to acquire a controlling interest in Hughes Electronics, the parent company of DIRECTV, subject to certain regulatory and shareholder approvals. This transaction follows regulatory opposition to the proposed acquisition of DIRECTV by EchoStar. Consummation of this transaction would result in additional industry concentration. In addition, financial restructurings of companies such as Adelphia Communications and several European operators may lead to further industry consolidation. In the second quarter of 2003, sales to Comcast accounted for 37% of net sales compared to 16% in the second quarter of 2002. In the second quarter of 2003, sales to Charter Communications accounted for 1% of net sales compared to 20% in the second quarter of 2002. For the first six months of 2003, Charter Communications represented 1% of net sales compared to 18% in the first six months of 2002. For the first six months of 2003, Comcast, DIRECTV and Echostar accounted for 29%, 13% and 11% of net sales, respectively, compared to net sales of less than 10% for each of these customers in the first six months of 2002. For the first six months of 2003, our top ten customers accounted for 69% of net sales. The loss of Comcast, DIRECTV, Echostar, or any other significant customer or any reduction in orders by Comcast, DIRECTV, Echostar, or any significant

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#### **Risk factors**

customer, or our failure to qualify our products with a significant customer could adversely affect our business, operating results and liquidity. In this regard, sales to Charter Communications have been, and are expected to continue to be, significantly lower in 2003 than in 2002, both in absolute dollars and as a percentage of revenue, as they are now in the latter stages of their network upgrade program and they have significantly reduced capital spending. 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 United States and in foreign markets;
- changes in market demand;
- the timing and amount of orders, especially from significant customers;
- the timing of revenue from systems contracts which may span several quarters;
- competitive market conditions, including pricing actions by our competitors;
- seasonality, with fewer construction and upgrade projects typically occurring in winter months and otherwise being affected by inclement weather;
- our unpredictable sales cycles;
- new product introductions by our competitors or by us;
- changes in domestic and international regulatory environments;
- market acceptance of new or existing products;
- the cost and availability of components, subassemblies and modules;
- the mix of our customer base and sales channels;
- the mix of our products sold;
- our development of custom products and software;
- the level of international sales; and
- economic and financial conditions specific to the cable and satellite industries, and general economic conditions.

  For example, the timing of deployment of our equipment can be subject to a number of other risks, including the availability of skilled engineering and technical personnel, the availability of other equipment such as digital set top boxes, and the need for local franchise and licensing approvals. We believe that changes in our customers—deployment plans have in recent quarters delayed, and may in the future delay, the receipt of new orders or the release of existing backlog.

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

during the third quarter of 2002 and the first quarter of 2003, we failed to meet our internal expectations, as well as the expectations

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of securities analysts and investors, and the price of our common stock declined, in some cases significantly.

#### We may need additional capital in the future and may not be able to secure adequate funds on terms acceptable to us or at all.

We have generated substantial operating losses since we began operations in June 1988. The extent of our future losses and the timing of potential profitability are highly uncertain, and we may never achieve 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 September 26, 2003, we had an accumulated deficit of approximately \$1.9 billion. We expect to incur losses for at least the next several quarters. These losses, among other things, have had and will have an adverse effect on our stockholders equity and working capital. If we fail to obtain the necessary capital, we will not be able to fund our operations.

We believe that the proceeds of this offering, with our existing liquidity sources, will satisfy our cash requirements for at least the next twelve months, including the final settlement and payment of C-Cube s pre-merger tax liabilities. However, we may need to raise additional funds if our expectations are incorrect, to fund our operations, to take advantage of unanticipated opportunities or to strengthen our financial position. This prospectus supplement is part of a registration statement on Form S-3 declared effective by the SEC in April 2002. Following the completion of this offering, and assuming the underwriters do not exercise their over-allotment option, 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 \$83 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 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.

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

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

We depend on our international sales and are subject to the risks associated with international operations, which may negatively affect our operating results.

Sales to customers outside of the United States in 2001, 2002 and the first half of 2003 represented 40%, 29% and 27%, 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. Part of our revenue growth strategy is to increase our presence in the international markets. Our international operations, and our efforts to increase sales in international markets, are subject to a number of risks, including:

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

Certain of our international customers have accumulated significant levels of debt and have announced during the past two 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 operations have typically been denominated in US 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 US dollars of accounts receivable, accounts payable and other monetary assets and liabilities arising from international operations may contribute to fluctuations in operating results. Furthermore, payment cycles for international customers are typically longer than those for customers in the United States. Unpredictable sales cycles could cause us to fail to meet or exceed the expectations of security analysts and investors for any given period. In addition, foreign markets may not develop in the future.

#### If demand for our products increases more quickly than we expect, we may be unable to meet our customers requirements.

Our net sales increased sequentially in the second and third quarters of 2003. If demand for our products continues to increase, the difficulty of accurately forecasting our customers—requirements and meeting these requirements will increase. Forecasting to meet customers—needs is particularly difficult in connection with newer products. Our ability to meet customer demand depends significantly on the availability of components and other materials as well as the ability of our contract manufacturers to scale their production. From time to time, we assess our relationship with our contract manufacturers. Changes in these relationships, or reallocating manufacturing to new or existing contract manufacturers, could

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adversely affect our ability to meet our customers requirements in a timely manner, if at all, and could create operating inefficiencies. Furthermore, we purchase several key components, subassemblies and modules used in the manufacture or integration of our products from sole or limited sources. Our ability to meet customer requirements depends in part on our ability to obtain a sufficient number of these materials in a timely fashion. Also, in recent years, in response to lower net sales and the prolonged economic recession, we significantly reduced our headcount and other expenses. As a result, we may be unable to respond to customer demand that increases more quickly than we expect. If we fail to meet customers supply expectations, our net sales would be adversely affected and we may lose business.

#### We face risks associated with having important facilities and resources located in Israel.

Harmonic maintains a facility in Caesarea in the State of Israel that, as of June 27, 2003, included 62 employees, or approximately 10% 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 US war on terrorism and the escalation of terrorist attacks and hostilities within Israel have heightened these risks. We cannot assure you that the protraction or escalation of current tensions in the Middle East will not adversely affect our business and results of operations.

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

#### Pending business combinations and other financial and regulatory issues among our customers could adversely affect our business.

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

While the capital market concerns about the domestic cable industry have eased somewhat since the summer of 2002, market conditions remain difficult and capital spending plans are generally constrained. It is likely that further industry restructuring will take place via mergers or spin-offs, such as the recent Comcast/AT&T Broadband transaction and the proposed spin-off of Time-Warner Cable from AOL Time-Warner. For instance, News Corp. Ltd. recently announced its plan to acquire a controlling interest in Hughes Electronics, the parent company of DIRECTV, subject to certain regulatory and shareholder approvals. This transaction follows regulatory opposition to the proposed acquisition of DIRECTV by EchoStar. We cannot currently predict the impact of the announcement by News Corp. Ltd. to acquire control of DIRECTV, and the related industry uncertainty, on our future sales. We believe that uncer-

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tainty during 2002 regarding the proposed DIRECTV and Echostar merger adversely affected capital spending by both of these parties as well as other customers. If the announcement by News Corp. Ltd. to acquire control of DIRECTV has a similar effect on industry capital spending, our sales will be adversely affected. In addition, further business combinations may occur in the satellite industry, and these further combinations could adversely affect our business. Regulatory issues, financial concerns and business combinations among our customers are likely to significantly affect the industry, its capital spending plans and our levels of business for the foreseeable future.

### We must be able to manage expenses and inventory risks associated with meeting the demand of our customers.

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

#### The markets in which we operate are intensely competitive and many of our competitors are larger and more established.

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

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

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

#### Broadband communications markets are characterized by rapid technological change.

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

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sell products that incorporate or are compatible with these new architectures or technologies, our business will suffer.

#### We need to develop and introduce new and enhanced products in a timely manner to remain competitive.

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

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

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

We purchase several key components, subassemblies and modules used in the manufacture or integration of our products from sole or limited sources, and we are increasingly dependent on contract manufacturers.

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

#### We 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

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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 June 27, 2003 due to reduced industry spending and demand for our products. If demand for products increases significantly, we may need to increase our headcount. Our ability to manage our business effectively in the future, including any future growth, will require us to train, motivate and manage our employees successfully, to attract and integrate new employees into our overall operations, to retain key employees and to continue to improve our operational, financial and management systems.

We are incurring additional costs and devoting more management resources to comply with increasing regulation of corporate governance and disclosure.

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

#### Competition for qualified personnel can be intense, and we may not be successful in attracting and retaining personnel.

Our future success will depend, to a significant extent, on the ability of our management to operate effectively, both individually and as a group. We are dependent on our ability to retain and motivate high caliber personnel, in addition to attracting new personnel. In spite of the current worldwide economic slowdown, competition for qualified 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 engineers and other technical personnel, could negatively affect our business.

#### We are liable for C-Cube s pre-merger tax liabilities, including tax liabilities resulting from the spin-off of its semiconductor business.

Under the terms of the merger agreement with C-Cube, Harmonic is generally liable for C-Cube s pre-merger tax liabilities. Approximately \$20.8 million of pre-merger tax liabilities remained outstanding and were included in accrued liabilities as of June 27, 2003. We are working with LSI Logic, which acquired C-Cube s spun-off semiconductor business in June 2001 and assumed its obligations, to develop an approach to settle these obligations, a process which has been underway since the merger in 2000. These liabilities represent estimates of C-Cube s pre-merger tax obligations to various tax authorities in 13 countries. We are currently in discussions with tax authorities in 2 of these countries, but none of these estimates has yet been finalized. Harmonic is unable to predict when any or all of these tax obligations will be paid, or in what amount. The full amount of the estimated obligation has been classified as a current liability. To the extent that these obligations are finally settled for less than the amounts provided, Harmonic is required, under the terms of the merger agreement, to refund the difference to LSI Logic. Conversely, if the settlements are more than the \$20.8 million pre-merger tax liability, LSI Logic is obligated to reimburse Harmonic.

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

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#### We may be subject to risks associated with other acquisitions.

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

# Cessation of the development and production of video encoding chips by C-Cube s spun-off semiconductor business may adversely impact us.

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

However, under the contractual relationships between Harmonic and the spun-off semiconductor business, which was acquired by LSI Logic in June 2001, the semiconductor business does not have a firm commitment to continue the development of video encoding microelectronic chips. As a result, the semiconductor business may choose not to continue future development of the chips for any reason. The semiconductor business may also encounter in the future technological difficulties in the production and development of the chips. If the spun-off semiconductor business is not able to or does not sustain its development and production efforts in this area our business, financial condition, results of operations and cash flows could be harmed. Also, this agreement expires in October 2004.

#### Our failure to adequately protect our proprietary rights may adversely affect us.

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

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

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proprietary rights of others, or to defend against claims of infringement or invalidity. Such litigation could result in substantial costs and diversion of resources and could negatively affect our business, operating results, financial position and cash flows.

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

#### We or our customers may face intellectual property infringement claims from third parties.

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

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

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

We are the subject of securities class action claims and other litigation which, if adversely determined, could harm our business and operating results.

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

A consolidated complaint, filed on December 7, 2000, was brought on behalf of a purported class of persons who purchased Harmonic spublicly 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

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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 Court has granted plaintiffs motion for a 31-day extension of time to file their opening brief. Plaintiffs opening brief is now due on November 17, 2003.

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

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, the Company has not recorded a liability. An unfavorable outcome of this litigation could have a material adverse effect on Harmonic s business, operating results, financial position and cash flows.

Harmonic announced on July 17, 2003 a settlement of its litigation with Power and Telephone Supply (P&T) in Federal court in Tennessee. Under the terms of the settlement agreement, Harmonic agreed to pay \$2.8 million to P&T in release of all outstanding claims. The settlement followed summary judgment against Harmonic on certain of the claims made by P&T under a Tennessee statute relating to retailers and suppliers. These claims arose from the cancellation of purchase orders on P&T by one its end-customers in 2000. Harmonic s operating results for the second quarter and first half of 2003 include a charge to general and administrative expense of approximately \$2.7 million related to the settlement

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#### Risk factors

with P&T. The settlement charge is after accounting for the value of products to be returned and other costs. Harmonic paid \$1.0 million of the settlement on July 24, 2003 and is obligated to pay the balance of \$1.8 million on January 15, 2004. The settlement payments are secured by a standby letter of credit.

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 US 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 US and other economies will recover and our business will improve.

#### Our stock price may be volatile.

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

We rely on a continuous power supply to conduct our operations, and any electrical and natural gas crisis could disrupt our operations and increase our expenses.

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

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.

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#### Risk factors

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

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

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

We have broad discretion in how we use the net proceeds of this offering, and we may not use these proceeds in a manner desired by our stockholders.

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

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# Use of proceeds

We estimate that the net proceeds to us from this offering will be approximately \$62.0 million (\$71.4 million if the underwriters over-allotment option is exercised in full), after the payment of underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering for general corporate purposes, including the payment of existing liabilities, research and development expenses, to pay for the development of new products or technologies, equipment acquisitions, and general working capital and operating expenses. We have not determined the amounts we plan to spend on any of the areas listed above or the timing of these expenditures. As a result, our management will have broad discretion to allocate the net proceeds from this offering.

Pending application of the net proceeds as described above, we intend to invest the net proceeds of the offering in short-term, investment-grade, interest-bearing securities.

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# Price range of common stock

Our common stock trades on the Nasdaq National Market under the symbol HLIT. The following table sets forth the quarterly range of high and low reported sale prices of our common stock on the Nasdaq National Market for the periods indicated:

	High	Low
Year ended December 31, 2001		
First Quarter	\$12.75	\$4.29
Second Quarter	14.37	2.75
Third Quarter	17.30	6.48
Fourth Quarter	15.13	6.50
Year ended December 31, 2002		
First Quarter	\$14.15	\$9.38
Second Quarter	12.20	2.60
Third Quarter	3.62	1.10
Fourth Quarter	3.52	1.01
Year ending December 31, 2003		
First Quarter	\$ 4.66	\$2.30
Second Quarter	5.43	3.28
Third Quarter	6.85	3.18
Fourth Quarter (through October 28)	8.79	6.25

On October 28, 2003, the last reported sale price of the common stock as reported on the Nasdaq National Market was \$7.75 per share. As of October 13, 2003, there were approximately 526 record holders of our common stock.

# Dividend policy

We have not paid dividends on our common stock. We currently do not intend to pay dividends and intend to retain any earnings for use in our business and the financing of our capital requirements for the foreseeable future. Our bank line of credit facility with Silicon Valley Bank includes covenants prohibiting the payment of dividends. The payment of any future cash dividends on our common stock will necessarily be dependent upon our earnings and financial needs, along with applicable legal and contractual restrictions.

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# Capitalization

The following table sets forth our capitalization as of June 27, 2003:

- on an actual basis; and
- on an adjusted basis giving effect to our sale of the common stock in this offering under this prospectus supplement and the receipt of the net proceeds of this sale.

This table should be read in conjunction with Management s discussion and analysis of financial condition and results of operations and our consolidated financial statements and the related notes incorporated by reference in this prospectus supplement and the accompanying prospectus.

	As of June 27, 2003		
	Actual	As adjusted	
	(unaudited, in thousands, except par value)		
Cash, restricted cash, cash equivalents and short-term investments	\$ 36,310	\$ 98,297	
Total liabilities	\$ 112,093	\$ 112,093	
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; 60,462 shares issued and outstanding, actual; 69,462 shares issued and outstanding, as adjusted)	60	69	
Capital in excess of par value	1,964,120	2,026,098	
Accumulated deficit	(1,924,474)	(1,924,474)	
Accumulated comprehensive income	157	157	
Total stockholders equity	39,863	101,850	
Total capitalization	\$ 151,956	\$ 213,943	

### The table above excludes:

- 8,076,834 shares of common stock issuable upon exercise of outstanding options as of September 26, 2003 granted under our stock plans, with a weighted average exercise price of \$14.39 per share;
- 4,113,205 additional shares of common stock available for future issuance under our stock option and employee stock purchase plans as of September 26, 2003; and
- 1,350,000 shares of common stock issuable upon exercise of the underwriters over-allotment option.

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### Dilution

The net tangible book value of our common stock on June 27, 2003 was approximately \$12.6 million, or \$0.21 per share. Net tangible book value per share is equal to the amount of our total tangible assets, less total liabilities, divided by the number of our shares of our common stock outstanding. Dilution in net tangible book value per share represents the difference between the amount per share paid by the purchasers of shares of our common stock in this offering and the net tangible book value per share of our common stock immediately afterwards. After giving effect to our sale of the 9,000,000 shares of common stock we are offering through this prospectus supplement, and after deducting the underwriting discounts and commissions and estimated offering expenses, our net tangible book value as of June 27, 2003 would have been approximately \$74.6 million, or \$1.07 per share. This represents an immediate increase in net tangible book value of \$0.86 per share to existing shareholders and an immediate dilution of \$6.33 per share to new investors purchasing our common stock in this offering. The following table illustrates this dilution:

Public offering price per share	\$7.40
Net tangible book value per share as of June 27, 2003	\$0.21
Increase per share attributable to new investors	0.86
Net tangible book value per share after this offering	1.07
Dilution per share to new investors	\$6.33

The foregoing table does not take into effect further dilution to new investors that could occur upon the exercise of outstanding options and therefore excludes:

- 8,076,834 shares of our common stock issuable upon exercise of outstanding options as of September 26, 2003 granted under our stock option plans, with a weighted average exercise price of \$14.39 per share; and
- 4,113,205 additional shares available for future issuance under our stock option and employee stock purchase plans as of September 26, 2003.

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### Selected consolidated financial data

We have derived our consolidated statement of operations data for the years ended December 31, 2000, 2001 and 2002 from our audited consolidated financial statements included in this prospectus supplement. We have derived our consolidated statement of operations data for the years ended December 31, 1999 and 1998 from our audited consolidated financial statements not included in this prospectus supplement. We have derived our consolidated balance sheet data as of June 27, 2003 and consolidated statement of operations data for each of the six months ended June 28, 2002 and June 27, 2003 from our unaudited consolidated financial statements included in this prospectus supplement. The unaudited consolidated financial statement data include, in our opinion, all adjustments (consisting only of normal recurring adjustments) that are necessary for a fair presentation of our financial position and results of operations for these periods. Operating results for the six months ended June 27, 2003 are not necessarily indicative of the results that may be expected for the fiscal year ending December 31, 2003. In addition, due to the acquisitions we have made, our results of operations are not necessarily comparable between periods presented. You should read the summary financial data set forth below in conjunction with Management s discussion and analysis of financial condition and results of operations and with our consolidated financial statements and related notes included in this prospectus supplement.

	Year ended December 31,					Six months ended	
					_	June 28,	June 27,
Consolidated statements of operations data:	1998	1999	2000	2001	2002	2002	2003
						(unaud	lited)
		(in thou	ısands, except per sl				
Net sales	\$ 83,857	\$184,075	\$ 263,046	\$ 203,810	\$186,632	\$110,341	\$ 78,694
Gross profit <sup>(1)</sup>	30,555	80,605	75,171	1,555	54,429	34,998	23,499
Income (loss) from operations	(24.040)	•••	(4.502.025)	(4.50.=0=)	( <b></b> - 10)	(2.1.0.10)	(22)
(1)(2)	(21,943)	29,017	(1,683,035)	(168,787)	(77,349)	(24,919)	(23,772)
Net income (loss) <sup>(1)</sup>	(21,453)	23,680	(1,654,008)	(166,407)	(76,918)	(25,136)	(23,349)
Basic net income (loss) per							
share	\$ (0.92)	\$ 0.84	\$ (34.06)	\$ (2.84)	\$ (1.29)	\$ (0.42)	\$ (0.39)
Diluted net income (loss) per							
share	\$ (0.92)	\$ 0.76	\$ (34.06)	\$ (2.84)	\$ (1.29)	\$ (0.42)	\$ (0.39)

(1) The six months ended June 27, 2003 gross profit, loss from operations and net loss include credits to cost of sales of \$2.1 million for products sold that had been written down in prior years. Operating expenses for the six months ended June 28, 2003 include a charge of approximately \$2.7 million related to the settlement of litigation with Power and Telephone Supply. The six months ended June 28, 2002 gross profit, loss from operations and net loss include charges of \$0.2 million as well as credits of \$2.9 million for products sold which had been written down in prior years. Operating expenses for the six months ended June 28, 2002 include a charge to operating expenses of \$2.7 million for probable losses on receivables for Adelphia Communications. Loss from operations for the six months ended June 27, 2003 and June 28, 2002 include amortization of intangible assets of \$6.9 million and \$11.7 million, respectively.

The year ended December 31, 2002 gross profit, loss from operations and net loss include 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 which had been written down in prior years. For the year ended December 31, 2002, 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 for Adelphia Communications, and severance and other costs of \$0.9 million.

The 2001 gross profit, loss from operations and net loss include 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 include 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.

The 1998 loss from operations and net loss include a charge to operating expenses of \$14.0 million for acquired in-process technology.

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

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# Management s discussion and analysis of financial condition and results of operations

The following discussion of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the related notes included elsewhere in this prospectus. The discussion contains forward-looking statements that involve known and unknown, risks and uncertainties, including those set forth under Risk factors.

#### **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, high definition television, high-speed Internet access and telephony. Historically, most of our sales have been derived from sales of digital headend products and fiber optic transmission systems to cable television and satellite operators. We also derive a small portion of our sales from telephone companies that offer video services to their customers.

Before 1997, almost all of our sales were derived directly or indirectly from sales of fiber optic transmission systems to cable television operators. With the introduction of 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 subsequently acquired by LSI Logic in June 2001. C-Cube merged into Harmonic, and Harmonic therefore acquired C-Cube s DiviCom business, which provides encoding products and systems for digital television. The merger was structured as a tax-free exchange of stock and has been 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 determined that there was an impairment and recorded an impairment charge of \$1.4 billion, eliminating goodwill and reducing identified intangibles acquired to \$79.3 million. The merged company has been organized into two operating divisions, Convergent Systems, or CS, for digital video systems, and Broadband Access Networks, or BAN, for fiber optic systems.

### **NET SALES**

Harmonic s net sales decreased 26% in the second quarter of 2003 compared to the second quarter of 2002, decreased 29% in the first half of 2003 compared to the first half of 2002, decreased 23% in 2001 compared to 2000 and 8% in 2002 compared to 2001. Since the middle of 2000, Harmonic s sales have been well below levels achieved by Harmonic and DiviCom in 1999 and early 2000. During 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 reduced revenue from Adelphia from the first quarter of 2002 through 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 accounted for approximately 5% of our net sales in the first quarter of 2002 and approximately 2% of our net sales for the full year in 2002 and the first half of 2003. The stock prices of other domestic cable companies came under pressure following the Adelphia Communications bankruptcy due to concerns about debt levels and capital expenditure requirements for new and expanded services. These financial difficulties, and their effect on our customers capital spending and access to capital, adversely affected our net sales. 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.

We believe that the financial condition of many of our customers has stabilized or improved, and our net sales increased sequentially in both the second and third quarters of 2003. However, despite the improve-

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# Management s discussion and analysis of financial condition and results of operations

ment, our quarterly net sales during the second and third quarters of 2003 were lower than during the first and second quarter of 2002, and European spending remains generally weak. Furthermore, another economic downturn or other factors could cause additional financial difficulties among our customers, and customers whose financial condition has stabilized may not purchase new equipment at levels we have seen in the past. Continued financial difficulties among our customers would adversely affect our operating results and financial condition. Also, News Corp. Ltd. recently announced its plan to acquire a controlling interest in Hughes Electronics, the parent company of DIRECTV, subject to certain regulatory and shareholder approvals. We cannot currently predict the impact of the announcement by News Corp. Ltd. to acquire control of DIRECTV, and the related industry uncertainty, on our future sales. As a result, we cannot assure you that the sequential net sales growth we had during the second and third quarters of 2003 will continue.

Harmonic often recognizes a substantial portion of its net sales 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. As a result of these and other factors, Harmonic s operating results in one or more future periods may fail to meet or exceed the expectations of securities analysts or investors. In that event, the trading price of our common stock would likely decline. Due to lower than expected sales in several quarters during 2000 and 2001, the third quarter of 2002, and the first quarter of 2003, Harmonic failed to meet the expectations of securities analysts, and the price of our common stock declined, in some cases significantly. See Risk factors Our operating results are likely to fluctuate significantly and may fail to meet or exceed the expectations of securities analysts or investors, causing our stock price to decline.

### **Segments**

CS division and BAN division net sales decreased 17% and 38% in the second quarter of 2003, respectively, compared to the second quarter of 2002. For the first half of 2003, CS and BAN net sales decreased 21% and 39%, respectively, compared to the first half of 2002. CS division sales increased significantly from the first quarter of 2001 through the second quarter of 2002 due principally to demand for our next-generation digital systems such as the Narrowcast Services Gateway, or NSG, for video-on-demand deployments, and the MV50 encoder. CS sales of the MV50 encoder benefited during this period from the expansion of local channel offerings and compliance with FCC must carry regulations by domestic direct broadcast satellite, or DBS, operators. However, CS sales decreased significantly after the first half of 2002 due principally to lower sales to cable operators, other than Comcast, as a result of lower NSG shipments, and as domestic cable operators focused on initial VOD service launches rather than new VOD deployments. In addition, during the second half of 2002 the decrease in CS sales was also attributable to lower sales to satellite customers that we believe resulted, in part, from the prolonged regulatory review of the proposed acquisition of DIRECTV by EchoStar. BAN division sales decreased significantly from the third quarter of 2000 due in particular to reduced spending by AT&T Broadband, which was acquired by Comcast in November 2002, and RCN, and in 2003 decreased due to reduced spending by Charter Communications. In 2000, 2001 and 2002, net sales of CS products accounted for approximately 33%, 63% and 59% of net sales, respectively, while net sales of BAN products accounted for approximately 67%, 37% and 41% of net sales, respectively. CS sales prior to the merger with C-Cube in May 2000 and our acquisition of the DiviCom business consisted of sales of our TRANsend and CyberStream product lines.

#### **Customer concentration**

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 2000, net sales to AT&T Broadband represented 12% of sales, and net sales to RCN represented 12% of net sales. In 2001, net sales to Charter

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### Management s discussion and analysis of financial condition and results of operations

Communications represented 11% of net sales. In 2002, net 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 net sales to the combined company would have been 17% of net sales. For the first six months of 2003, our top ten customers accounted for 69% of net sales. For the same period, Comcast, DIRECTV and EchoStar accounted for 29%, 13% and 11% of net sales and Charter Communications accounted for 1% of net sales. In 2003, sales to Charter Communications have been significantly lower than in 2002, both in absolute dollars and as a percentage of revenue, as Charter Communications is now in the later stages of its network upgrade program. In addition, our sales to Charter Communications may be impacted by capital market concerns about the cable industry and Charter Communications in the aftermath of the Adelphia Communications bankruptcy filing in June 2002. As of December 31, 2002, Harmonic had accounts receivable of \$3.5 million due from Charter Communications, which was subsequently collected.

#### International

Sales to customers outside of the United States in 2000, 2001 and 2002 represented 40%, 40% 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. While net sales to international customers increased sequentially in the second quarter of 2003, principally in Asia, international sales generally remained weak. We believe that this was due in part to financial restructurings and regulatory issues in Europe. However, we expect international sales to continue to account for a meaningful portion of our net sales for the foreseeable future.

### COST OF SALES AND OPERATING EXPENSES

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

During 2001, Harmonic reduced its workforce by approximately 30% and recorded severance and other costs of \$2.5 million at the time. As a result of uncertain market conditions and lower sales during the second half of 2002, Harmonic 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. These actions coupled with normal turnover reduced headcount from over 1,000 at the end of 2000 to 559 as of June 27, 2003.

In light of Harmonic s 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 surplus of vacant space in the San Francisco Bay Area. The excess facilities charge recorded during the third quarter of 2002 was for facilities that we no longer occupied, do not intend to occupy or plan to sublease. The 2002 charges followed \$30.1 million recorded for excess facilities in 2001 when the initial accruals were established.

Operating results for the second quarter and first half of 2003 include 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 Federal court in Tennessee. Under the terms of the settlement agreement announced on July 17, 2003, Harmonic agreed to pay \$2.8 million to P&T in release of all outstanding claims. The settlement followed summary judgment against Harmonic on certain of the claims made by P&T under a Tennessee statue relating to retailers and suppliers. These claims arose from the cancellation of purchase orders on P&T by one its end-customers in 2000. The settlement charge is after accounting for the value of products to be returned and other costs. Harmonic paid \$1.0 million of the settlement on July 24, 2003 and is obligated to pay the balance of \$1.8 million on January 15, 2004. The settlement payments are secured by a standby letter of credit.

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### Management s discussion and analysis of financial condition and results of operations

### CRITICAL ACCOUNTING POLICIES

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 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 has transferred to the customer. Revenue from product sales is generally recognized upon shipment, and allowances are provided for estimated returns and discounts. Such allowances are adjusted periodically to reflect actual and anticipated experience. Revenue on solution sales, which principally include the design, manufacture, test, integration and installation of equipment to our customers—specifications, or acquired from third parties to be integrated with our products, is 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 is generally recognized as services are performed. Maintenance services are recognized ratably over the maintenance term, which is typically one year. Deferred revenue represents billings in excess of revenue recognized.

Revenue recognition in each period is dependent on our application of these accounting policies. If we believe that any of the conditions to recognize revenue has not been met, we defer revenue recognition. For example, if collectibility is not reasonably assured we defer revenue recognition until subsequent cash receipt. 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 for a particular period could be adversely affected.

### Allowances for doubtful accounts, returns and discounts

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

#### Valuation of inventories

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

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### Management s discussion and analysis of financial condition and results of operations

future demand and expected product lifecycles, our operating results and financial position could be adversely affected.

### Impairment of long-lived assets

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

### 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 accrual we estimate expected sublease rental income on each excess facility. In the event we are unable to achieve expected levels of sublease rental income, we will need to revise our estimate of the liability which could materially impact our operating results, financial position and cash flows. For restructuring activities initiated after December 31, 2002 we will follow Statement of Financial Accounting Standards, or SFAS No. 146, Accounting for Costs Associated with Exit or Disposal Activities, as discussed under New Accounting Pronouncements below.

### 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 certain 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 outcome and, accordingly, no loss contingencies have been accrued with respect to those actions and claims. There can be no assurance, however, that we will prevail. An unfavorable outcome of these legal proceedings could have a material adverse effect on our business, financial position, operating results and cash flows. As of June 27, 2003, \$2.8 million was accrued for the settlement of litigation with Power and Telephone Supply in Federal court in Tennessee. See Legal Proceedings.

### Accounting for income taxes

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

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

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### Management s discussion and analysis of financial condition and results of operations

### RESULTS OF OPERATIONS

The following table sets forth the percentage of net sales represented by items in our consolidated income statements for the periods presented:

		Fiscal year ended December 31,			Six months ended		
				June 28,	June 27,		
	2000	2001	2002	2002	2003		
				(unaudited)			
Net sales	100%	100%	100%	100%	100%		
Cost of sales	71	99	71	68	70		
Gross profit	29	1	29	32	30		
Operating expenses							
Research and development	19	25	22	20	21		
Selling, general and administrative	25	53	43	29	34		
Impairment of goodwill and other intangibles	525						
Amortization of intangibles	84	6	5	5	5		
Acquired in-process technology	15						
Total operating expense	668	84	70	54	60		
Loss from operations	(639)	(83)	(41)	(22)	(30)		
Interest and other income, net	4	1	,	,	( /		
Loss before income taxes	(635)	(82)	(41)	(22)	(30)		
Provision for (benefit from) income taxes	(6)	,	,	1	` /		
,							
Net loss	(629)%	(82)%	(41)%	(23)%	(30)%		
	<u> </u>				<u> </u>		

#### Six months ended June 28, 2002 and June 27, 2003

### Net sales

Harmonic s net sales decreased 26% from \$56.3 million in the second quarter of 2002 to \$41.7 million in the second quarter of 2003. For the six month periods, net sales decreased 29% from \$110.3 million in the first half of 2002 to \$78.7 million in the first half of 2003. The sales decreases in both periods reflected significantly lower sales in each division. BAN division sales decreased 38% in the second quarter of 2003 compared to the second quarter of 2002, and decreased 39% in the first six months of 2003 compared to the first six months of 2002. The BAN sales decreases were principally due to cautious capital spending by cable operators, in particular Charter Communications. We believe this cautious spending was caused by current conditions in financial markets and capital market concerns about the cable industry in the aftermath of the Adelphia bankruptcy filing in the first half of 2002. CS division sales decreased 17% in the second quarter of 2003 compared to the second quarter of 2002, and decreased 21% in the first six months of 2003 compared to the first six months of 2002. The CS sales decreases were attributable to lower sales to domestic cable and satellite customers due in part to competitive pricing pressures, partially offset by volume increases, in certain product lines. Harmonic s domestic sales represented 73% of net sales in the second quarter of 2003 compared to 77% of net sales in the second quarter of 2002.

### **Gross profit**

Gross profit decreased from \$19.2 million (34% of net sales) in the second quarter of 2002 to a gross profit of \$12.8 million (31% of net sales) in the second quarter of 2003. For the six month periods, gross profit decreased from \$35.0 million (32% of net sales) in the first six months of 2002 to \$23.5 million (30% of net sales) in the first six months of 2003. The decreases in gross profit for both periods of 2003 were primarily due to lower overall sales volume and heightened competitive pricing pressures for certain products, particularly in the CS division. These factors were partially offset by a higher proportion of CS division sales in both periods of 2003, which historically carry higher margins, and cost control

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measures implemented during the second half of 2002. The cost control measures included a reduction in headcount to streamline our manufacturing operations and technical service and support organizations.

Gross profit includes amortization of intangibles of \$3.0 million and \$6.0 million for the second quarter and first half of 2002, respectively, compared to \$1.5 million and \$3.0 million for the second quarter and first half of 2003, respectively. In addition, gross profit includes credits related to products sold for which the cost basis had been written down in prior years of \$2.9 million for the second quarter and first half of 2002 compared to \$1.0 million and \$2.1 million for the second quarter and first half of 2003, respectively.

Harmonic anticipates that gross margins may fluctuate in future periods due to a number of factors including sales volume, pricing, product mix, factory and service organization spending levels and the timing and amount of sales of previously written down products.

### Research and development

Research and development expenses decreased from \$10.8 million (19% of net sales) in the second quarter of 2002 to \$8.4 million (20% of net sales) in the second quarter of 2003. For the six month periods, research and development expenses decreased from \$21.9 million (20% of net sales) in 2002 to \$16.9 million (22% of net sales) in 2003. The decreases in absolute dollars were primarily due to lower headcount associated with the workforce reductions during the second half of 2002 and ongoing cost control measures. The increases in research and development expenses as a percentage of sales were attributable to decreased net sales.

### Selling, general and administrative

Selling, general and administrative expenses decreased from \$17.0 million (30% of net sales) in the second quarter of 2002 to \$14.4 million (35% of net sales) in the second quarter of 2003. For the six month periods, selling, general and administrative expenses decreased from \$32.3 million (29% of net sales) in 2002 to \$26.5 million (34% of net sales) in 2003. The decreases in absolute dollars were principally due to a reduction in headcount associated with the work force reductions implemented during the second half of 2002. The increases in selling, general and administrative expenses as a percentage of sales were attributable to decreased net sales.

Selling, general and administrative expenses for the second quarter and first half of 2002 included a \$2.7 million charge to provide for probable losses on receivables in connection with the Adelphia bankruptcy filing. In addition, selling, general and administrative expenses for the second quarter and first half of 2003 included a charge of \$2.7 million related to the settlement of litigation with Power and Telephone Supply in Federal court in Tennessee.

### Amortization of intangibles

Harmonic recorded amortization of \$2.8 million and \$5.7 million in the second quarter and first half of 2002, respectively. Amortization expense decreased to \$1.9 million and \$3.9 million in the second quarter and first half of 2003 due to cessation of amortization associated with the acquisition of Cogent Technology.

### Interest and other income (expense), net

Interest and other income (expense), net, increased from \$0.3 million in the second quarter of 2002 to \$0.4 million in the second quarter of 2003, and increased from \$0.3 million in the first half of 2002 to \$0.6 million in the first half of 2003. The increases were principally due to foreign currency translation gains in both periods of 2003 compared to foreign currency translation losses in both periods of 2002, partially offset by lower interest income and higher interest expense in each period of 2003.

### **Income taxes**

Provisions for income tax expense of \$0.1 million and \$0.2 million were recorded for the second quarter and first half of 2003 compared to no provision in the second quarter of 2002 and a provision of \$0.5 million for the first half of 2002. The lower provision in the first half of 2003 compared to the first half of 2002 was due to the expectation of lower foreign income taxes in 2003 than in 2002.

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#### **Segments**

Harmonic s management uses income or loss from segment operations as its measure of segment profitability. Income or loss from segment operations excludes intangible amortization expense, corporate expenses, including excess facilities charges, and interest and other income. See Note 13 of Notes to Consolidated Financial Statements for further detail regarding segment operations.

Fluctuations in net sales by operating segments are discussed more extensively in the section above entitled Net Sales. With regard to losses from segment operations, the CS division had a loss from segment operations of \$1.7 million in the second quarter of 2002 compared to a loss of \$1.6 million in the second quarter of 2003. For the six month periods CS had a loss from segment operations of \$4.6 million for the 2002 period compared to \$5.1 million for the 2003 period. The increased CS losses in both periods of 2003 compared to 2002 were due to lower sales and lower gross margins offset in part by lower operating expenses resulting from lower headcount. CS results for the second quarter and first half of 2003 included credits of \$0.1 million and \$0.3 million, respectively, related to products sold for which the cost basis had been written down in prior years, compared to \$0.3 million for the second quarter and first half of 2002.

The BAN division had income from segment operations of \$2.0 million in the second quarter of 2002 compared to a loss from segment operations of \$0.6 million in the second quarter of 2003. For the six month periods, BAN had income from segment operations of \$1.0 million in the 2002 period compared to a loss from segment operations of \$2.1 million in the 2003 period. The BAN losses in both periods of 2003 compared to income in both periods of 2002 were due to lower sales and lower gross margins, partially offset by lower operating expenses associated with lower headcount. BAN results for the second quarter and first half of 2003 include credits of \$0.9 million and \$1.8 million, respectively, related to products sold for which the cost basis had been written down in prior years, compared to \$2.6 million for the second quarter and first half of 2002.

### Years ended December 31, 2000, 2001 and 2002

#### Net sales

Harmonic s net sales decreased 8% to \$186.6 million in 2002, from \$203.8 million in 2001. The lower net sales were due to a 15% decrease in CS division sales, partially offset by a 3% increase in BAN division sales. The CS sales decrease was principally attributable to significantly lower sales of encoders to domestic satellite customers. We believe these lower sales were due, in part, to purchasing delays created by the uncertainty of the regulatory review of the proposed acquisition of DIRECTV by Echostar, which was ultimately called off in the fourth quarter. The lower CS division sales to satellite customers were partially offset by higher sales of the Narrowcast Services Gateway, or NSG, for video-on-demand deployments to cable operators. With regard to the BAN division, the modest increase was due to higher sales of node products, partially offset by lower transmitter sales, and generally higher unit volumes, offset by lower pricing. International sales represented 29% of net sales in 2002, compared to 40% in 2001 reflecting a 35% decrease in international sales. This international sales decrease was partially offset by a 9% increase in domestic sales. The significant decrease in international sales was due principally to depressed market conditions, particularly in Europe, which impacted both divisions.

Harmonic s net sales decreased 23% to \$203.8 million in 2001, from \$263.0 million in 2000. The lower net sales were due to a 57% decrease in BAN sales partially offset by a 47% increase in CS sales. The significant decrease in BAN sales in 2001 was principally due to weak capital spending on transmission upgrades, particularly reduced capital spending by AT&T Broadband and RCN. These two customers accounted for a combined total of less than 5% of net sales in 2001 compared to a combined total of 23% of net sales in 2000. The significant increase in CS sales during 2001 was principally due to sales of new next-generation digital products including the MV50 encoder and Narrowcast Services Gateway, or NSG, which commenced volume shipment in the second quarter of 2001. This increase was also attributable to the fact that net sales for 2000 included only eight months of sales for the DiviCom business as the C-Cube merger was accounted for as a purchase transaction and closed on May 3, 2000. International sales represented 40% of net sales in both 2001 and 2002.

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### **Gross profit**

Gross profit increased to \$54.4 million (29% of net sales) in 2002 from \$1.6 million (1% of net sales) in 2001. The increase in gross profit was primarily attributable to special charges in 2001 of \$40.9 million, principally for excess and obsolete inventories, and credits in 2002 of \$6.9 million related to products sold for which the cost basis had been written down in prior years. Also contributing to the higher gross profit in 2002 were cost control measures, including a reduction in headcount in our manufacturing and technical service and support organizations, associated with work force reductions throughout 2001 and during the second half of 2002. These factors which contributed to higher gross margins in 2002 compared to 2001, were partially offset by lower pricing and a higher proportion of BAN division revenue which historically has had lower margins.

Gross profit decreased to \$1.6 million (1% of net sales) in 2001, from \$75.2 million (29% of net sales) in 2000. The decrease in gross profit was primarily due to decreased sales and associated lower fixed cost absorption as a result of lower production levels and purchasing volumes. Also contributing to the lower gross profit and margins in 2001 were lower pricing and changes in product mix. In addition, approximately \$40.9 million of the reduction in gross profit was attributable to the recording of provisions for excess and obsolete inventories, the impairment of certain fixed assets and severance and other costs resulting from streamlining our product lines in both divisions. The provisions for excess and obsolete inventories of \$39.2 million resulted from significant reductions in demand for our products, principally BAN division products. In accordance with our policy we established provisions for inventory levels in excess of our demand forecasts. The decreases in gross profit and gross margins were partially offset by the inclusion of DiviCom for the entire year in 2001.

# Research and development

Research and development expenses decreased to \$40.8 million (22% of net sales) in 2002, from \$51.3 million (25% of net sales) in 2001. The decreases in 2002 were primarily due to a reduction in headcount associated with the workforce reductions over the past two years and ongoing cost control measures. Research and development expenses increased to \$51.3 million (25% of net sales) in 2001 from \$49.3 million (19% of net sales) in 2000. The increase in absolute dollars was primarily due to inclusion of DiviCom for the entire year in 2001, which historically spent a higher percentage of net sales on research and development than Harmonic, partially offset by lower headcount and associated expenses. In 2001, the increase in research and development expenses as a percentage of net sales was primarily attributable to decreased net sales, but also attributable to the inclusion of DiviCom for the entire year.

### Sales, general and administrative

Selling, general and administrative expenses decreased to \$81.4 million (43% of net sales) in 2002, from \$106.3 million (53% of net sales) in 2001. The decreases were due principally to the reduction in headcount associated with the work force reductions and to lower promotional costs. In addition, selling, general and administrative expenses in 2001 included excess facilities charges of \$30.1 million compared to \$22.5 million in 2002. Selling, general and administrative expenses increased to \$106.3 million (53% of net sales) in 2001 from \$67.0 million (25% of net sales) in 2000. The increase in absolute dollars was due principally to \$32.8 million of excess facility, severance and other costs, and the inclusion of DiviCom for the entire year in 2001, partially offset by lower headcount and associated expenses. The increase as a percentage of net sales was also attributable to the decrease in net sales.

### Amortization and impairment of intangibles

Amortization of intangibles decreased to \$9.5 million in 2002 from \$12.7 million in 2001. The decrease in 2002 was due principally to cessation of goodwill amortization on adoption of SFAS No. 142 Goodwill and Other Intangible Assets effective January 1, 2002. Harmonic expects to record approximately \$7.7 million in amortization of intangibles in 2003.

Amortization of intangibles decreased to \$12.7 million in 2001, from \$221.7 million in 2000. The decrease in 2001 was due to the recording of an impairment charge of \$1.4 billion as of December 31, 2000 to write down long-lived assets associated with the acquisition of the DiviCom business completed in May 2000. DiviCom was acquired in a tax-free exchange of stock at a time when the market values of

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telecommunications equipment manufacturers were substantially higher. The DiviCom business had experienced a significant decrease in the demand for its products and services as customers in the digital headend systems market reduced levels of current and planned capital expenditures and, as a result, revenues, cash flows and expected future growth rates decreased. Due to these significant changes, management performed an evaluation of the recoverability of the goodwill and other long-lived assets related to the DiviCom business in accordance with SFAS No. 121 Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of. Because the estimated future undiscounted cash flows of this operation were less than the carrying value of the related long-lived assets as of December 31, 2000, an impairment charge was required. The impairment charge represents the amount required to write-down long-lived assets to fair value based on management s best estimate of this operation s future discounted cash flows. As a result of the impairment charge, Harmonic wrote off the remaining unamortized goodwill and reduced the recorded value of other identified intangibles related to its acquisition of the DiviCom business to \$79.3 million.

### Acquired in-process technology

Harmonic recorded charges to operations of \$39.8 million in 2000 for acquired in-process technology in connection with the C-Cube merger and Cogent acquisition. See Note 3 of Notes to Consolidated Financial Statements. These amounts were expensed on the acquisition dates in accordance with generally accepted accounting principles because the acquired technology had not yet reached technological feasibility and had no future alternative uses.

### Interest and other income, net

Interest and other income, net, was \$0.9 million in 2002, \$1.6 million in 2001 and \$10.5 million in 2000. The decrease in 2002 was due principally to lower interest income, and to a lesser extent higher interest expense on borrowings under Harmonic s equipment term loan. The decrease in interest income was due to lower average cash and short term investment balances as well as lower interest rates. The decrease in 2001 was principally due to lower average cash and short term investments. Lower interest rates also contributed to the decrease.

#### **Income taxes**

Harmonic recorded a provision for income taxes of \$0.5 million in 2002 principally due to foreign income taxes despite a loss before income taxes of \$76.4 million. The valuation allowance was increased from \$63.0 million in 2001 to \$104.9 million in 2002. 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, 2002. Harmonic recorded a benefit from income taxes of only \$0.8 million despite a loss before income taxes of \$167.2 million in 2001. This was principally due to the establishment of the valuation allowance for the full amount of Harmonic s net deferred tax assets of \$63.0 million. For 2000, Harmonic recorded a benefit from income taxes of only \$18.6 million, principally due to non-deductible goodwill impairment and amortization, and acquired in-process technology related to the acquisition of DiviCom.

In 2003, Harmonic expects to record a provision for income taxes of less than \$1.0 million due principally to foreign income taxes. This estimate is based on current tax laws, current estimates of 2003 operating results and the expected distribution of income among various tax jurisdictions, all of which is subject to change. In addition, Harmonic is liable for C-Cube s taxes for periods prior to the merger. See Risk factors We are liable for C-Cube s pre-merger tax liabilities, including tax liabilities resulting from the spin-off of its semiconductor business.

### Segments

Harmonic s management uses income or loss from segment operations as its measure of segment profitability. Income or loss from segment operations excludes intangible amortization expense, corporate expenses, including excess facilities charges, and interest and other income. See Note 13 of Notes to Consolidated Financial Statements.

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Fluctuations in net sales by operating segment are discussed more extensively in the section above entitled, *Net Sales*. With regard to losses from segment operations, BAN had a loss of \$4.0 million in 2002 compared to a loss of \$60.1 million in 2001. The improved results in 2002 were due to a 3% increase in sales, improved factory absorption and lower operating expenses, resulting primarily from lower headcount. In addition, BAN results included special charges in 2001 of \$28.6 million for excess and obsolete inventories and credits of \$5.9 million in 2002 related to products sold in 2002 for which the cost basis had been written down in prior years. BAN had a loss from segment operations of \$60.1 million in 2001 compared to \$4.4 million in 2000. The larger loss in 2001 was due primarily to a 57% decrease in sales and the recording of special charges impacting gross profits as discussed above.

CS had a loss from segment operations of \$15.7 million in 2002 compared to a loss of \$36.3 million in 2001. Despite a 15% decrease in sales in 2002, results improved, principally due to lower headcount and other cost control measures. In addition, CS results included special charges for excess and obsolete inventories in 2001 of \$10.6 million and credits of \$1.0 million in 2002 related to products sold in 2002 for which the cost basis had been written down in prior years. CS had a loss from segment operations of \$36.3 million in 2001 compared to a loss of \$25.1 million in 2000. Despite a 47% increase in sales, the loss from segment operations increased in 2001 due in part to the special charges for excess and obsolete inventories which impacted gross profits. In addition, 2000 results only included eight months of operating results for the DiviCom business as the C-Cube merger closed on May 3, 2000.

### **QUARTERLY OPERATING RESULTS**

The table below presents certain unaudited consolidated statement of operations data for our six most recently completed fiscal quarters.

	2002				2003			
Quarterly data:	Q1	Q2	Q3	Q4	Q1	Q2		
	(unaudited)					dited)		
		(in thousands, except per share data)						
Net sales	\$ 54,032	\$ 56,309	\$ 37,019	\$ 39,272	\$ 37,041	\$ 41,653		
Gross profit	15,763	19,235	9,928	9,503	10,747	12,752		
Loss from operations	(13,505)	(11,414)	(38,436)	(13,994)	(11,752)	(12,020)		
Net loss	(14,012)	(11,124)	(38,030)	(13,752)	(11,667)	(11,682)		
Basic and diluted net loss per								
share	\$ (0.24)	\$ (0.19)	\$ (0.63)	\$ (0.23)	\$ (0.19)	\$ (0.19)		

Net sales for the third quarter of 2003 were \$47.3 million and net loss was \$(7.5) million.

### LIQUIDITY AND CAPITAL RESOURCES

As of June 27, 2003, cash and cash equivalents and short term investments totaled \$36.3 million compared to \$49.2 million as of December 31, 2002.

Cash provided by operations was \$1.7 million in the first half of 2002 compared to cash used in operations of \$11.7 million in the first half of 2003. The use of cash in operations in the first six months of 2003 compared to cash provided by operations in 2002 was primarily due to significantly lower non-cash charges for depreciation and amortization of intangibles in 2003, and a more significant increase in accounts receivable in 2003 than in 2002, partially offset by a lower net loss in 2003. The more significant increase in accounts receivable in the first six months of 2003 than the comparable period of 2002 was due to recognition of a more substantial portion of our revenue in the last month of the second quarter of 2003 than in the last month of the second quarter of 2002 related to a net operating loss carryback claim.

Cash used in operations was \$24.8 million in the year ended December 31, 2001 compared to \$5.4 million in the year ended December 31, 2002. The reduced use of cash in operations in 2002 was due to a significantly reduced net loss that was substantially offset by non-cash charges for depreciation and amortization and net cash provided through improved working capital management. Cash used in

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operations in 2001 was primarily due to the significant net loss, partially offset by depreciation and amortization, and net cash provided through improved working capital management compared to 2000. During 2001, Harmonic received income tax refunds of \$25.6 million.

Under the terms of the merger agreement with C-Cube, Harmonic is generally liable for C-Cube s pre-merger tax liabilities. Approximately \$20.8 million of pre-merger tax liabilities remained outstanding and were included in accrued liabilities as of June 27, 2003. We are working with LSI Logic, which acquired C-Cube s spun-off semiconductor business in June 2001 and assumed its obligations, to develop an approach to settle these obligations, a process which has been underway since the merger in 2000. These liabilities represent estimates of C-Cube s pre-merger tax obligations to various tax authorities in 13 countries. We are currently in discussions with tax authorities in 2 of these countries, but none of these estimates has yet been finalized. Harmonic is unable to predict when any or all of these 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 post-June 27, 2003 settlements are more than the \$20.8 million pre-merger tax liability, LSI Logic is obligated to reimburse Harmonic.

Additions to property, plant and equipment were \$1.8 million and \$1.5 million in the first half of 2002 and 2003, respectively. Additions to property, plant and equipment were \$29.1 million during the year ended December 31, 2001 compared to \$3.3 million in the year ended December 31, 2002. The decrease from 2001 was due principally to expenditures during 2001 for leasehold improvements and related furniture, fixtures and equipment in connection with relocation of former DiviCom employees to new facilities in Sunnyvale, and the implementation of a new enterprise resource planning software system. These major capital programs commenced during the second half of 2000 and were substantially completed during the first half of 2001. As a result of these major programs, capital expenditures for the combined company were significantly higher during 2000 and 2001 than historic levels, in 2002, and levels expected in the future. Harmonic currently expects capital expenditures to be approximately \$3 million during 2003.

In March 2003, Harmonic entered into a new bank line of credit facility with Silicon Valley Bank, which provides for borrowings up to \$13.5 million, including \$3.5 million for equipment under a secured term loan that can be drawn down until December 31, 2003. This new facility, which expires in March 2004, contains financial and other covenants including the requirement for Harmonic to maintain on deposit with the bank the greater of 50% of total cash, cash equivalents and short-term investments or \$10.0 million, or satisfy a liquidity covenant in the event cash, cash equivalents and short-term investments are less than \$10.0 million. This provision of the facility causes a restriction on Harmonic s ability to use cash and cash equivalents. Depending on the level of borrowings, letters of credit and other guarantees outstanding at any point in time, the amount of the restriction on usage will vary. As of June 27, 2003, \$4.5 million of cash and cash equivalents were restricted as to usage. If Harmonic is unable to maintain on deposit with the bank the minimum balance of \$10.0 million, or satisfy the liquidity covenant requirement, 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, including in the event amounts are outstanding under the facility, offset rights against the amounts Harmonic has maintained on deposit with the bank. At June 27, 2003, Harmonic was in compliance with these covenants, but as of July 25, 2003, we were not in compliance with a net loss covenant. Partially as a result, on September 26, 2003, we entered into a loan modification agreement which waived this noncompliance, amended the net loss covenant and also amended certain restrictions on issuances of letters of credit under the facility. As of September 26, 2003, we were in compliance with the covenants under our facility.

Future borrowings pursuant to the line bear interest at the bank s prime rate plus 0.25%-1.75% (prime rate plus 1.75%-2.0% for equipment borrowings) depending upon Harmonic total cash position. Borrowings are payable monthly and are collateralized by all of Harmonic s assets. Harmonic has entered into an agreement with another financial institution holding amounts on deposit to allow, in the event of default, Silicon Valley Bank to control these deposits. As of June 27, 2003, \$2.1 million was outstanding under the

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equipment term loan portion of this facility. The term loan was payable monthly, including principal and interest at rates of 6.25% per annum on outstanding borrowings as of June 27, 2003 and matures at various dates through January 2006. Other than standby letters of credit and guarantees there were no other outstanding borrowings or commitments under the line of credit facility as of June 27, 2003. See Note 15 of Notes to Consolidated Financial Statements for further detail regarding these obligations.

In March 2003, Harmonic also renewed a facility with Silicon Valley Bank that provides for the sale of trade receivables on a non-recourse basis up to \$12.5 million and expires in March 2004. Trade receivables sold under the facility are discounted based on the bank s prime rate plus 1.5% for North American customers and based on the bank s prime rate plus 2% for all other customers. This facility was not utilized in 2002 or in the first half of 2003.

Harmonic s ability to utilize both facilities with Silicon Valley Bank depends to a significant extent on having a sufficient amount of qualified receivables, which may fluctuate depending on the level and timing of sales and the aging, customer concentration, international mix and credit quality of receivables. To the extent that Harmonic does not have sufficient qualified receivables, Harmonic s ability to utilize these facilities could be significantly constrained. Based upon current levels of receivables, Harmonic believes that it would not be able to utilize a significant portion of these facilities at this time.

Future payments under contractual obligations, and other commercial commitments, as of December 31, 2002, were as follows (in thousands):

Contractual obligations:	Less than 1 year	1-3 years	4-5 years	After 5 years	Total amounts committed
Long-term debt	\$ 1,862	\$ 710	\$	\$	\$ 2,572
C-Cube pre-merger tax liabilities	20,800				20,800
Operating leases <sup>(1)</sup>	10,979	19,861	23,460	34,887	89,187
Inventory purchase commitments	12,932		<u> </u>	<u> </u>	12,932
Total contractual obligations	\$46,573	\$20,571	\$23,460	\$34,887	\$125,491

Other commercial commitments:	Less than 1 year	1-3 years	4-5 years	After 5 years	Total amounts committed
Standby letters of credit Indemnifications <sup>(2)</sup>	\$ 850	\$			\$ 850
Guarantees	1,285	623			1,908
Total commercial commitments	\$2,135	\$623			\$2,758

<sup>(1)</sup> Operating lease commitments include \$41.6 million of accrued excess facilities costs.

<sup>(2)</sup> 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). No amounts have been accrued in respect of the indemnification provisions at December 31, 2002.

We believe that the proceeds of this offering, 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 take advantage of unanticipated opportunities or to strengthen our financial position. This prospectus supplement is part of a registration statement on Form S-3 declared effective by the SEC in April 2002. Following the completion of this offering, and assuming the underwriters do not exercise their over-allotment option, 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 \$83 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

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cable, telecom and satellite industries. There can be no assurance that such financing will be available on terms acceptable to us, if at all. See Risk factors We may need additional capital in the future and may not be able to secure adequate funds on terms acceptable to us or 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.

### 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 US 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 US dollars. Following implementation of the Euro in January 2002, a higher proportion of our European business is denominated in Euros which may subject us to increased foreign currency exchange risk. In addition, Harmonic has various international branch offices which provide sales support and systems integration services. While Harmonic does not anticipate that near-term changes in exchange rates will have a material impact on Harmonic s operating results, financial position and liquidity, Harmonic cannot assure you that a sudden and significant change in the value of local currencies would not harm Harmonic s operating results, financial position and liquidity.

#### Interest rate risk

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

### RECENT ACCOUNTING PRONOUNCEMENTS

In July 2002, the Financial Accounting Board (FASB) issued SFAS No. 146, Accounting for Costs Associated with Exit or Disposal Activities. The standard replaces Emerging Issues Task Force (EITF) Issue No. 94-3, Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity (including Certain Costs Incurred in a Restructuring) and requires companies to recognize costs associated with exit or disposal activities when they are incurred rather than at the date of a commitment to an exit or disposal plan. Harmonic adopted SFAS No. 146 effective January 1, 2003 and the adoption had no effect on our financial position, results of operations or cash flows.

In November 2002, the FASB issued FASB Interpretation No. 45 (FIN 45), Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others. FIN 45 requires the guarantor to recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken in issuing the guarantee. It also expands on the disclosures by a guarantor in its financial statements about its obligations under certain guarantees that it has issued and to be made in regard to product warranties. Disclosures required under FIN 45 are included in these financial state-

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### Management s discussion and analysis of financial condition and results of operations

ments, however, the initial recognition and initial measurement provisions of FIN 45 are applicable on a prospective basis to guarantees issued or modified after December 31, 2002. Harmonic adopted FIN 45 effective January 1, 2003, and the adoption had no effect on our financial position, results of operations or cash flows.

In November 2002, the Emerging Issues Task Force (EITF) reached a consensus on Issue No. 00-21, Revenue Arrangements with Multiple Deliverables. EITF Issue No. 00-21 provides guidance on how to account for arrangements that involve the delivery or performance of multiple products, services and/or rights to use assets. The provisions of EITF Issue No. 00-21 will apply to revenue arrangements entered into in fiscal periods beginning after June 15, 2003. Harmonic adopted EITF Issue No. 00-21 effective June 28, 2003. The adoption of this standard had no material impact on our historical financial position, results of operations or cash flows.

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

In April 2003, the FASB issued SFAS No. 149, Amendment of Statement 133 on Derivative Instruments and Hedging activities. SFAS No. 149 amends and clarifies the accounting for derivative instruments, including certain derivative instruments embedded in other contracts, and for hedging activities under SFAS No. 133, Accounting for Derivative Instruments and Hedging Activities. SFAS No. 149 is generally effective for contracts entered into or modified after June 27, 2003 and for hedging relationships designated after June 27, 2003. The adoption of this standard had no effect on our financial position, results of operations or cash flows.

In May 2003, the FASB issued SFAS No. 150, Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity. SFAS No. 150 requires that certain financial instruments, which under previous guidance were accounted for as equity, must now be accounted for as liabilities. The financial instruments affected include mandatorily redeemable stock, certain financial instruments that require or may require the issuer to buy back some of its shares in exchange for cash or other assets and certain obligations that can be settled with shares of stock. SFAS No. 150 is effective for all financial instruments entered into or modified after May 31, 2003 and must be applied to existing instruments for the first interim period beginning after June 15, 2003. The adoption of this standard had no effect on our financial position, results of operations or cash flows.

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

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### **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, high definition television, high-speed Internet access and telephony. Historically, most of our sales have been derived from sales of digital headend products and fiber optic transmission systems to cable television and satellite operators. We also derive a small portion of our sales from telephone companies that offer video services to their customers.

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

#### INDUSTRY OVERVIEW

### Demand for broadband services

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

### Competition and deregulation

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

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scaled back or halted network construction because of funding limitations caused by conditions in capital markets.

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

### Our cable market

To address increasing competition and demand for high-speed broadband services, cable operators are introducing digital video, voice and data services in addition to traditional analog video. By offering bundled packages of broadband services, cable operators are seeking to obtain a competitive advantage over telephone companies and DBS providers and to create additional revenue streams. In order to provide high-speed Internet service, cable operators are deploying cable modems in an increasing number of their systems. According to the National Cable & Telecommunications Association, there were an estimated 13.8 million cable modem subscribers in the United States as of June 30, 2003. Similarly, cable operators are upgrading and rebuilding their networks to offer digital video, which enables cable operators to provide more channels and better picture quality than analog video, allowing them to better compete against the increasing penetration of DBS services. In many areas, cable operators have rolled out new interactive services such as video-on-demand, or VOD, on their digital platforms. VOD allows subscribers to order, start, pause and stop selected movies and other content at their own discretion. Some cable operators are also upgrading and building out their networks to provide telephony services. These operators have rolled out telephone services in a number of major markets and some have also targeted certain business markets for the delivery of high-bandwidth services.

The ability of cable operators to deliver digital video, voice and high-speed data services on a broad scale, however, is constrained by the design of their legacy networks. These networks, which reach more than 90% of US homes with televisions, were built initially for one-way broadcast analog television and have required substantial upgrades to make them capable of reliably supporting two-way digital services, such as high-speed Internet access and telephony. While some US operators have substantially completed these network upgrades, certain others, as well as many international operators, have not yet completed significant network upgrades. In addition to upgrading and extending network infrastructure with fiber optics, in order to provide new services it is necessary for cable operators to invest in digital headend equipment that can receive, process and distribute content from a variety of sources in increasingly complex headends. For example, VOD services require video storage equipment and servers, complemented by devices capable of routing, multiplexing and modulation for delivering signals to individual subscribers over an HFC network. As these new services continue to attract increasing numbers of subscribers, cable operators will be required to continue to upgrade both headends and the transmission network to handle the greater volume and complexity of traffic. We expect that operators will invest capital to more effectively manage available bandwidth as well as continue network upgrades such as node segmentation, the support of fewer homes on a single optical node.

#### Our satellite market

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

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

#### Other markets

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

### The market opportunity

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

### **Current industry conditions**

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

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Kirsch and Quiero, have also filed for protection from creditors. We believe that the financial condition of many of our customers has stabilized or improved, but industry spending levels have not returned to historic levels. Furthermore, it is likely that further industry restructuring will take place via mergers or spin-offs, such as the recent Comcast/ AT&T Broadband transaction, the proposed spin-off of Time-Warner Cable from AOL Time-Warner and the proposed acquisition by News Corp. Ltd. of a controlling interest in Hughes Electronics, the parent company of DIRECTV. Regulatory issues, financial concerns and business combinations among our customers are likely to significantly affect the industry, its capital spending plans, and our levels of business for the foreseeable future.

#### **PRODUCTS**

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

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

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

### Convergent Systems products

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

### **Compression products**

DiviCom encoders. This is a complete line of high performance encoders, which provide compression of video, audio and data channels. Using sophisticated signal pre-processing, noise reduction and encoding algorithms, these encoders produce high-quality video and audio at low data rates. Their compliance with widely adopted standards enables interoperability with other products and systems. The MV50 encoder, introduced in early 2001, has the highest compression efficiency of our encoder family, while the MV400 is designed for encoding of high definition television signals.

### **Edge devices**

*Narrowcast Services Gateway.* Our Narrowcast Services Gateway, or NSG, is a fully integrated server gateway, which interfaces with the output from a video server and integrates routing, multiplexing and modulation into a single package for the delivery of video-on-demand services to subscribers over cable networks. The NSG is usually supplied with Gigabit Ethernet inputs, allowing the operator to deliver IP signals from the headend to the edge of the network for subsequent modulation on to the HFC network.

### Stream processing products

*Media Node*. Media Node is a flexible MPEG-2 networking, switching and multiplexing platform. In a broadcast facility, the video, audio and data streams must be combined or multiplexed into a single stream prior to transmission. Our multiplexing platform combines compressed streams from various

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sources into a single transport stream. Sources may include Harmonic encoders or third-party devices such as video servers.

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

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

### Control and automation products

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

### **Broadband Access Networks products**

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

### **Optical transmission systems**

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

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

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

METROLink system. Our METROLink DWDM system allows operators to expand the capacity of a single strand of fiber and also to provide narrowcast services directly from the headend to nodes. This ability can significantly reduce the size 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 video-on-demand, to be carried on a single fiber and targeted to particular segments of the network by optical wavelength.

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### Optical nodes, return path products and ethernet switching products

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

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

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

*CurbSwitch.* Designed as a module for our PWRBlazer node platform, this hardened Ethernet switch enables operators to add high-bandwidth services in fiber-to-the-business or fiber-to-the-home applications. Initial commercial shipments of CurbSwitch were delivered in the third quarter of 2002.

#### Network management

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

### **Technical services**

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

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### **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 2002.

United States International

Adelphia Communications