

ORBOTECH LTD  
Form 20-F  
April 30, 2003  
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**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

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**FORM 20-F**

.. REGISTRATION STATEMENT PURSUANT TO SECTION 12 (b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

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

**For the fiscal year ended December 31, 2002**

OR

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

**For the transition period from            to**

**Commission File Number 2-92065**

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**ORBOTECH LTD.**

(Exact name of Registrant as specified in its charter and translation of Registrant's name into English)

**ISRAEL**

(Jurisdiction of incorporation or organization)

**SANHEDRIN BOULEVARD, NORTH INDUSTRIAL ZONE, YAVNE 81101, ISRAEL**

(Address of principal executive offices)

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**Securities registered or to be registered pursuant to Section 12(b) of the Act:**

**NONE**

**Securities registered or to be registered pursuant to Section 12(g) of the Act:**

**ORDINARY SHARES, NIS 0.14 NOMINAL (PAR) VALUE**

(Title of Class)

**Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:**

**NONE**

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**As of December 31, 2002, the Registrant had outstanding 31,971,504 Ordinary Shares(1), NIS 0.14 Nominal (par) Value each(2)**

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 (the **Exchange Act** ), during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark which financial statement item the Registrant has elected to follow. Item 17  Item 18

(1) Does not include a total of 7,384,939 Ordinary Shares, 5,838,565 of which were subject to outstanding stock options granted pursuant to the Company's stock option plans (1,785,647 of which had vested) and 1,546,374 of which remained available for future option grants pursuant to such plans, both as of December 31, 2002, comprised of:

(a) 983,201 Ordinary Shares issuable pursuant to options under the Company's Israeli Key Employee Share Incentive Plan (1992) (As Amended, 1994, 1996, 1997, 1998, 1999) (the **1992 Plan** ), all of which were subject to options that had been granted (of which 690,479 had vested);

(b) 3,077,363 Ordinary Shares issuable pursuant to options under the Company's 1995 Incentive Stock Plan for Key Employees of Orbotech Ltd.'s Subsidiaries (As Amended, 1997, 1998, 1999, 2000, 2001) (the **1995 Plan** ), of which:

(i) 2,041,009 Ordinary Shares were subject to options that had been granted (of which 698,209 had vested); and

(ii) 1,036,354 Ordinary Shares remained available for future option grants pursuant to the 1995 Plan;

(c) 24,375 Ordinary Shares issuable pursuant to an option granted to a consultant to the Company under the Stock Option Plan for Consultants of Orbotech Ltd. (1998) (the **1998 Plan** ), which had fully vested; and

(d) 3,300,000 Ordinary Shares issuable pursuant to options under the Company's Employee Share Ownership and Option Plan (2000) (the **2000 Plan** ), of which:

(i) 2,789,980 Ordinary Shares were subject to options that had been granted (of which 372,584 had vested); and

(ii) 510,020 Ordinary Shares remained available for future option grants pursuant to the 2000 Plan.

Also does not include 483,000 Ordinary Shares purchased by the Company during 2000 and held as treasury shares under Israeli law. For as long as such Ordinary Shares are owned by the Company they have no rights and, accordingly, are neither eligible to participate in or receive any dividends nor are they entitled to participate in, be voted at or be counted as part of the quorum for any meetings of shareholders of the Company.

(2)

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Unless otherwise stated, all earnings per share, share and option data presented in this Annual Report on Form 20-F have been adjusted to give effect to the issues of bonus shares (equivalent to three-for-two stock splits) undertaken by the Company in November 1999 and September 2000 (see Item 4 Information on the Company History and Development of the Company).

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### **Introduction**

This Annual Report on Form 20-F relates to the Ordinary Shares New Israeli Shekels 0.14 nominal (par) value each ( **Ordinary Shares** ) of Orbotech Ltd. (the **Company** , the **Registrant** or **Orbotech** ). In this Annual Report, references to the Company are, unless the context otherwise requires, intended to be to the Company and its consolidated subsidiaries and joint venture.

Orbotech is principally engaged in the design, development, manufacture and marketing of yield-enhancing, production support solutions for specialized applications in the supply chain of the electronics industry. The Company's products include automated optical inspection ( **AOI** ) and process control systems for bare and assembled printed circuit boards ( **PCB** s) and for flat panel displays ( **FPD** s), and imaging solutions for PCB production. In addition, the Company markets computer-aided manufacturing ( **CAM** ) solutions for PCB production. Through its subsidiary, Orbograph Ltd. ( **Orbograph** ), the Company also develops and markets automatic check reading software to banks and other check processing organizations. The Company is continuing to develop its proprietary technologies for use in other applications both within and outside the electronics industry. The Company also derives a significant portion of its revenues from the service and support of its products.

### **Cautionary Statement Regarding Forward-Looking Information**

This Annual Report may contain certain forward-looking statements and information with respect to the business, financial condition, results of operations, plans, objectives and competitive position of the Company, which statements can often be identified by the use of forward-looking terminology such as believes , expects , may , will , should or anticipates , the negatives thereof or other variations thereon or comparable terminology, or by discussions of strategy. Such statements include, but are not limited to, certain statements appearing in Item 3 Key Information Risk Factors; Item 4 Information on the Company and Item 5 Operating and Financial Review and Prospects regarding trends in the electronics and other industries relevant to the Company, revenues, net income, industry size, competitive position, market demands, volumes, prices, margins, research and development, capital expenditures, patents, the effect of technological developments, strategy and management objectives, opinions and outlook for 2003 and beyond, and are derived from beliefs and assumptions of the Company's management based, in part, upon information currently available to the Company. Such statements reflect the present views of the Company with respect to market conditions and future events and are inherently subject to various risks, uncertainties and other factors which may affect the ability of the Company to implement its business strategy and/or may cause actual results to differ materially from those contemplated by the statements expressed herein. These risks, uncertainties and factors include, but are not limited to, the timing and strength of new product offerings, pricing strategies of the Company and its competitors, mix of product and service revenues, introduction of competing products by other companies, lack of acceptance of new products and services by the Company's intended customers, changes in the Company's business strategy or those of its competitors, the Company's ability to continue to receive adequate raw materials from its suppliers on acceptable terms (or at all) or to continue to meet its liquidity needs, changes in the political and regulatory framework in which the Company operates or in economic or technological trends or conditions, including currency fluctuations, inflation and consumer confidence, on a global, regional or national basis.

Many of the above factors are beyond the control of the Company and almost all of them are difficult or impossible to predict with accuracy. Therefore, the Company wishes to caution each reader of this Annual Report to consider carefully these, as well as any other specific factors discussed with each forward-looking statement in this Annual Report and as may be disclosed in the Company's other filings with the Securities and Exchange Commission (the **SEC** ). For more information regarding some of the above factors, see Item 3 Key Information Risk Factors.

To the extent that this Annual Report contains forward-looking statements (as distinct from historical information) the Company desires to take advantage of the safe harbor provisions of the United States Private Securities Litigation Reform Act of 1995 and is therefore including this statement for the express purpose of availing itself of the protections of the safe harbor with respect to all forward-looking statements. Furthermore, the Company does not assume any obligation to update any forward looking statements contained herein.



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**PART I**

**Item 1. *Identity of Directors, Senior Management and Advisers***

**1.A *Directors and Senior Management***

Not applicable in Annual Report on Form 20-F.

**1.B *Advisers***

Not applicable in Annual Report on Form 20-F.

**1.C *Auditors***

Not applicable in Annual Report on Form 20-F.

**Item 2. *Offer Statistics and Expected Timetable***

**2.A *Offer Statistics***

Not applicable in Annual Report on Form 20-F.

**2.B *Method and Expected Timetable***

Not applicable in Annual Report on Form 20-F.

**Item 3. *Key Information***



**3.A Selected Financial Data**

The consolidated statement of operations data set forth below with respect to the years ended December 31, 2002, 2001 and 2000, and the consolidated balance sheet data as of December 31, 2002 and 2001, have been derived from the Consolidated Financial Statements listed in Item 18, which have been prepared in accordance with generally accepted accounting principles ( **GAAP** ) in the United States. The consolidated statement of operations data set forth below with respect to the years ended December 31, 1999 and 1998, and the consolidated balance sheet data as of December 31, 2000, 1999 and 1998, have been derived from other consolidated financial statements not included herein. The selected consolidated financial data set forth below should be read in conjunction with Item 5 Operating and Financial Review and Prospects, and the Consolidated Financial Statements listed in Item 18.

**Table of Contents****Statement of Operations Data:****(in thousands except per share data)**

	Year Ended December 31,				
	2002	2001	2000	1999	1998
Revenues	\$ 216,368	\$ 301,904	\$ 372,341	\$ 278,426	\$ 231,827
Cost of revenues:					
Cost of products sold and services rendered	130,284	162,293	182,239	141,505	119,530
Write-down of inventories(1)		7,013			
Settlement with the Government of Israel in respect of research and development grants received(2)		14,173			
Total cost of revenues	130,284	183,479	182,239	141,505	119,530
Gross profit	86,084	118,425	190,102	136,921	112,297
Research and development costs:					
Expenses incurred	44,384	50,047	42,237	32,584	30,468
Less government participations(2)	2,191		140	601	4,542
Net research and development costs	42,193	50,047(3)	42,097	31,983	25,926
Selling, general and administrative expenses	50,184	58,612	60,727	45,148	38,493
Amortization of goodwill and other intangible assets	2,521	7,291	4,558	3,774	2,794
Restructuring costs(4)	10,733	6,149			
Settlement of patent litigation(5)					(12,000)
Operating income (loss)	(19,547)	(3,674)	82,720	56,016	33,084
Financial income net	2,888	4,730	8,005	4,635	4,215
Income (loss) before taxes on income	(16,659)	1,056	90,725	60,651	37,299
Taxes on income	(1,099)	(975)	10,838	7,879	4,898
Income (loss) from operations of the Company and its subsidiaries and joint venture	(15,560)	2,031	79,887	52,772	32,401
Share in losses of an associated company	(233)				
Minority share in losses (profits)			(814)	368	(263)
Net income (loss)	(15,793)	2,031	79,073	53,140	32,138
Earnings (loss) per share:					
basic	\$ (0.49)	\$ 0.06	\$ 2.51	\$ 1.72	\$ 1.07
diluted	\$ (0.49)	\$ 0.06	\$ 2.40	\$ 1.66	\$ 1.02
Weighted average number of shares used in computation of earnings (loss) per share:					
basic	31,972	31,819	31,566	30,866	30,203
diluted	31,972	32,871	32,932	31,962	31,413

**Balance Sheet Data:**

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(in thousands)

	December 31,				
	2002	2001	2000	1999	1998
Working capital	\$ 248,754	\$ 256,027	\$ 248,866	\$ 187,921	\$ 142,894
Total assets	387,169	407,625	419,815	311,710	246,432
Long-term debt (net of current maturities)	11,906(2)	11,338(2)		770	2,088
Capital stock	96,564	94,195	87,482	75,905	69,532
Shareholders' equity	295,434	308,969	300,021	231,695	169,405

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- (1) The write-down of inventories of \$7.0 million in 2001 relates to excess inventories of raw materials for certain of the Company's PCB inspection products.
- (2) Prior to 2001, a portion of the Company's research and development costs was funded by the Government of Israel, through the Office of the Chief Scientist at the Ministry of Industry and Trade of the State of Israel (the "OCS"), in the form of royalty-bearing participations. These amounts were deducted from the related research and development expenditures as incurred. During 1999, the Company decided to phase out Israeli Government participation in its research and development activities due to the conditions then imposed upon such participation by the Israeli Government. In December 2001, the Company reached an agreement with the OCS (the "OCS Agreement") pursuant to which it undertook to pay \$14.2 million to the Government of Israel in settlement of all royalty obligations (other than those of Orbograp) arising from sales after June 30, 2001 with respect to previous OCS grants to the Company. The Company decided to make this payment in annual installments over five years commencing in 2003. The OCS Agreement was also a pre-condition to Orbotech's participation in a new OCS program under which it has become eligible to receive future research and development grants without any royalty obligations and pursuant to which it received \$2.2 million during 2002. See Item 4 Information on the Company; Item 5 Operating and Financial Review and Prospects Research and Development Policy Results of Operations; and Notes 1m and 8a(1) to the Consolidated Financial Statements listed in Item 18.
- (3) Net research and development costs for the year ended December 31, 2001 included \$1.2 million in consideration for co-operation on joint research and development projects between the Company and Jenoptik AG ("Jenoptik"), a large, diversified German holding company engaged, in part, in high-end optics technology. This was effected by the issuance of 67,500 Ordinary Shares to an affiliate of Jenoptik.
- (4) The restructuring charges of \$10.7 million in 2002 and \$6.1 million in 2001 relate to reductions in the Company's workforce and the rationalizations of certain of its manufacturing and operating activities in light of the global downturn in the electronics industry. See Item 5 Operating and Financial Review and Prospects Year Ended December 31, 2002 Compared To Year Ended December 31, 2002; Year Ended December 31, 2001 Compared To Year Ended December 31, 2000; and Note 14c to the Consolidated Financial Statements listed in Item 18.
- (5) The amount relating to the settlement in 1998 of the patent litigation between the Company and KLA-Tencor Corporation ("KLA") arose out of a suit filed by KLA in 1990 against Orbot Systems Ltd. ("Orbot").

No cash dividends have been paid by the Company in the last five years.

***3.B Capitalization and Indebtedness***

Not applicable in Annual Report on Form 20-F.

***3.C Reasons for the Offer and Use of Proceeds***

Not applicable in Annual Report on Form 20-F.

***3.D Risk Factors***

Investors, holders and prospective purchasers of Ordinary Shares and other persons reading this Annual Report should, in addition to having due regard to the Cautionary Statement Regarding Forward-Looking Information noted above, also give consideration to the information set forth below and elsewhere in this Annual Report concerning risks and uncertainties in connection with any investment in the Company's Ordinary Shares:

*(a) Dependence on the Worldwide Electronics Industry*

The predominant portion of the Company's products are used in manufacturing processes employed in the production of virtually all major electronic products, particularly those associated with the computer and telecommunications industries. As such, the Company depends very significantly upon the strength of the

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worldwide electronics industry, and in particular upon the need by electronics component manufacturers to make continuing capital investments in systems and products, such as those marketed and sold by the Company, for use in their production and manufacturing processes. This need is a reflection, in turn, of the worldwide level of demand for the products and devices produced by these electronics component manufacturers. Demand for consumer end-products is normally a function of the prevailing global or regional economic environment and is negatively affected in circumstances of a general economic slow-down such as that which began in the late part of 2000 and continues in effect.

Demand for the Company's products is also created, in part, by technological developments affecting product functionality or giving rise to new or enhanced products, and which therefore generate an ongoing need on the part of electronics component manufacturers for yield-enhancing, production support solutions of the type which the Company provides. Should changes in these technologies not continue to occur, or if there were to emerge other technologies, such as those which may reduce or even obviate the need for the use of PCBs and FPDs in electronic devices, this could have the effect of reducing overall demand for the Company's principal products.

There can be no assurance as to the future levels of demand for electronic products and devices and, correspondingly, as to the demand which may exist for PCBs or FPDs and, in turn, for the Company's principal products. These factors, coupled with the Company's limited ability to reduce its expenses due to the ongoing need for investment in research and development and to maintain the Company's worldwide customer and support operations, and the difficulties associated with any such reductions, could, in circumstances of reduced overall demand for electronic devices using PCBs and FPDs, have a material adverse effect on the Company's business and results of operations as occurred during 2001 and 2002.

### ***(b) The Cyclical Nature of the PCB and FPD Industries***

The PCB and FPD industries have in the past been, and today remain, cyclical in nature, and have experienced periodic downturns, most recently in the last two years. Because the Company's business relies considerably upon continuing capital investments by manufacturers of bare and assembled PCBs and manufacturers of FPDs, it may be negatively affected in circumstances of a general economic slow-down, as is presently the case, where the availability of capital resources for investment, particularly in the computer or communications industries, is reduced. In addition, the timing of capital expenditures by manufacturers is usually such that the Company does not normally have a substantial volume of unfilled orders, and products are generally shipped to customers within a relatively short period after receipt of orders. As a result, the Company's ability to foresee possible future changes in the total volume of such orders may be limited.

There can be no assurance as to the future levels of demand for electronic products and devices. Reduced demand for the inspection and other systems and products developed and sold by the Company caused by lower demand for PCBs or FPDs, coupled with the Company's limited ability to reduce its significant expenditures for research and development and worldwide customer and support operations, and the difficulties associated with any such reductions, could have a material adverse effect on the Company's business and results of operations as occurred during 2001 and 2002. For further information see Item 4 Information on the Company Business Overview The Company's Products; and Item 5 Operating and Financial Review and Prospects Year Ended December 31, 2002 Compared To Year Ended December 31, 2001; Trend Information.

### ***(c) The Company's Location in Israel***

The Company is incorporated under the laws of the State of Israel and its headquarters and primary research, development and production facilities are located in Israel. As such, the Company is directly influenced by political, economic and military conditions affecting Israel. Any major hostilities involving Israel, a substantial decline in the prevailing regional security situation or the interruption or curtailment of trade

between Israel and its present trading partners could have a material adverse effect on the Company's operations. In

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addition, the Company benefits from certain Israeli Government programs and tax legislation, particularly regarding its production facilities in Israel. The loss of such benefits could have a material adverse effect on the Company's business, financial condition and results of operations. For further information see Item 4 Information on the Company Additional Considerations Relating to the Company's Operations in Israel.

### ***(d) Competition; Rapid Technological Change***

Although the Company is a world leader in the design, development, manufacture and marketing of AOI systems for bare PCBs and for FPDs and of imaging solutions for PCB production, it faces competition from a number of companies which either produce or are developing such systems and products. In addition, there exist a relatively large number of companies which develop and provide AOI solutions for manufacturers of assembled PCBs, resulting in a strong competitive environment in which the Company's success may be adversely affected by any failure of the Company to develop and market, in a timely manner, AOI solutions offering superiority of performance and handling, or to offer consistent and effective service and support of those systems to its customers.

The Company's competitors in all product lines can be expected to continue to improve the design and performance of their products and to introduce new products with more competitive prices and performance features. Although the Company attempts to maintain its competitive position through its policy of substantial investment in research, development, marketing and operations, there can be no assurance that the Company will be able to continue to make such investments or that the Company will be able to achieve, in a timely manner, the technological advances necessary to develop new products and product enhancements to meet rapid change in manufacturing technologies required for PCBs and FPDs in order to maintain its current competitive position. For further information see Item 4 Information on the Company Business Overview Competition.

### ***(e) Operation in International Markets***

The Company anticipates that, as in the past, sales of products and services outside Israel will continue to account for virtually all of its revenues. In 2002, approximately 83% of the Company's revenues from equipment sales were derived from sales in the Far East, including approximately 27% from sales in Taiwan, 18% from sales in Japan, 19% from sales in China and 11% from sales in Korea. The risks and complexities inherent in doing business in international markets, including those associated with the possibility of a concentration of sales within a particular country or region, the imposition of governmental controls and local standards, the need to comply with a wide variety of foreign and domestic export laws, political and economic instability, trade restrictions, changes in tariffs and taxes, longer payment cycles usually characteristic of international sales and the general difficulties associated with administering business overseas, as well as overall economic conditions, may operate to have a material adverse effect on the Company's business, financial condition and results of operations (see Item 4 Information on the Company Marketing, Sales and Support; and Item 5 Operating and Financial Review and Prospects Impact of Inflation and Currency Fluctuations; Effective Corporate Tax Rate; Geographical Analysis; Worldwide Economic Situation; Cost of Revenues).

### ***(f) Ability to Obtain and Retain Qualified Staff***

The Company's success depends, in significant part, upon its continuing ability to attract and retain highly qualified managerial, scientific, technical, sales and marketing personnel. Demographic trends, non-availability of appropriately qualified and skilled employees, competition for the services of highly specialized computer software programmers and hardware engineers, financial market conditions and future business decisions of the Company and its competitors may all operate in a manner detrimental to the Company, thereby having a material adverse effect on the Company's business and results of operations (see Item 4 Information on the Company Strategy; Competition; Item 5 Operating and Financial Review and Prospects Impact of Inflation and Currency Fluctuations; Geographical Analysis; Worldwide Economic Situation; Cost of



Revenues; and Item 6 Directors, Senior Management and Employees Employees).

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### ***(g) Intellectual Property Protection***

The Company's future success and its competitive position are dependent in significant part upon the Company's proprietary technology, and the Company relies on patent, trade secret, trademark and copyright law, as well as technical safeguards and non-disclosure agreements with its employees, subcontractors and potential business associates, to protect its intellectual property. There can be no assurance that the Company will be able to protect its technology, or that others will not develop technologies that are similar or superior to the Company's technology, duplicate the Company's technology, design around the patents or other proprietary rights held by the Company or breach these agreements. For further information see Item 5 Operating and Financial Review and Prospects Research and Development, Patents and Licenses, etc.

### ***(h) Foreign Currency Fluctuations***

In 2002, 2001 and 2000, approximately 26%, 32% and 27%, respectively, of the Company's revenues, and approximately 51%, 48% and 49%, respectively, of the Company's expenses, were denominated in currencies other than the United States dollar (the **Dollar** or **\$**). Because the Company's financial results are reported in Dollars, fluctuations in the rates of exchange between the Dollar and non-Dollar currencies may have an adverse effect on the Company's results of operations. Accordingly, an increase in the value of a particular currency relative to the Dollar will increase the Dollar reporting value for transactions in such currency, and a decrease in the value of a particular currency relative to the Dollar will decrease the Dollar reporting value for such transactions. This effect on the Dollar reporting value for transactions is only partially offset by the impact that such fluctuations may have on the Company's non-Dollar costs. The Company may, from time to time, take various measures designed to hedge, in part, its exposure to these effects. There can be no assurance that foreign currency fluctuations will not have a material adverse effect on the Company's financial condition and results of operations. See Item 5 Operating and Financial Review and Prospects Impact of Inflation and Currency Fluctuations; Liquidity and Capital Resources; Notes 11 and 12 to the Consolidated Financial Statements listed in Item 18; and Item 11 Quantitative And Qualitative Disclosures About Market Risk.

### ***(i) Dependence upon Key Suppliers***

Certain of the various key components and subassemblies included in many of the Company's systems are purchased from a single or limited group of suppliers. Should any of these suppliers be unable to meet the Company's requirements in a timely manner, or should the Company otherwise experience an interruption in supply from any of these sources, the possible resulting late deliveries of the Company's products and services may have an adverse effect on the Company's results of operations. Although the Company generally maintains an inventory of critical components used in the manufacture and assembly of its systems, there can be no assurance that such supplies will be sufficient to avoid potential delays. For further information see Item 4 Information on the Company Production and Sources of Supply.

## **Item 4. Information on the Company**

### **4.A History and Development of the Company**

#### ***(a) Corporate History***

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The Company was incorporated in Israel, as a company limited by shares, on February 8, 1981 under the name Optrotech Ltd. pursuant to the provisions of the then current Israeli Companies Ordinance. The legislative framework within which the Company now operates is the Israeli Companies Law, 5759-1999 (the **Companies Law** ), which became effective on February 1, 2000, and the Israeli Companies Ordinance (New Version) 1983, as amended (the **Companies Ordinance** ).

In August 1984, the Company made an initial public offering of its Ordinary Shares in the United States. The Ordinary Shares are listed on the Nasdaq National Market ( **Nasdaq** ) and are traded under the symbol ORBK.

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On August 17, 1992, the Company entered into a Share Exchange Agreement and Plan of Merger (the **Merger Agreement**) with Orbot, a private Israeli company which was engaged primarily in the design, development, manufacture and marketing of AOI and process control systems for use in the manufacture of bare PCBs, the then principal shareholders of the Company and all of the then shareholders of Orbot (the **Former Orbot Shareholders**), pursuant to which the Former Orbot Shareholders, on October 27, 1992, transferred all of their shares and all outstanding options to purchase or acquire shares in Orbot to the Company in exchange for a sufficient number of Ordinary Shares and options to purchase Ordinary Shares so that, following consummation of the transaction, the Former Orbot Shareholders owned 50% of the issued and outstanding share capital of the Company on a fully diluted basis (giving effect to certain post-closing adjustments). The Merger Agreement also provided for the merger of Orbot with and into the Company, in such manner that the Company would be the surviving entity (the **Merger**).

Pursuant to the Merger Agreement the Company changed its name to Orbotech Ltd., effective as of October 27, 1992. The Merger was approved by the Tel Aviv-Jaffa District Court effective as of January 1, 1993.

On November 1, 1999, the board of directors of the Company (the **Board of Directors**) approved the allotment as bonus shares, to each shareholder of record entitled thereto at the close of business on November 12, 1999, of one additional Ordinary Share for every two Ordinary Shares held at the close of business on that date. On August 1, 2000, the Board of Directors approved the allotment as bonus shares, to each shareholder of record entitled thereto at the close of business on September 8, 2000, of one additional Ordinary Share for every two Ordinary Shares held at the close of business on that date.

### *(b) Major Business Developments*

The Company's business initially centered upon the design, development, manufacture, marketing and service of AOI and process control systems and imaging solutions for use in the manufacture of bare PCBs, and since the Merger the Company has been the world's leader in providing such systems. Since 1991, the Company has also been engaged, and has become a world leader, in the design, development, manufacture, marketing and service of AOI and process control systems for use in the manufacture of FPDs. Commencing in 1997, the Company has also been engaged in the design, development, manufacture, marketing and service of AOI and process control systems for use in the manufacture of assembled PCBs. In addition, since 1995, the Company has developed and marketed to banks and other check processing organizations solutions enabling automatic check reading through data conversion software. This represented the first application of the Company's machine vision and image processing technologies outside the electronics industry.

In 1996, the Company entered into an agreement with Jenoptik to establish a joint venture for the development of direct imaging technologies (the **DI Joint Venture**). Jenoptik had previously developed a laser-based direct imaging system suitable for the production process of PCB prototypes and short production runs. During 2000, the Company acquired all of the right, title and interest in and to the DI Joint Venture, which is now wholly-owned by the Company, in consideration for the issuance of 90,000 Ordinary Shares. An additional 67,500 Ordinary Shares were issued on March 15, 2002, in consideration for Jenoptik's co-operation with the Company on joint research and development projects. For further information on direct imaging, see Item 4 Information on the Company Business Overview The Company's Products Bare PCBs.

In 1997, the Company commenced the design, development, manufacture and marketing of AOI systems for assembled PCBs through a limited partnership (**Orbotech-Schuh**), wholly-owned by the Company since 2001, which acquired the AOI activity of Dipl.- Ing W. Schuh GmbH & Co. KG, a German private limited partnership which had been engaged in the manufacture of AOI systems for assembled PCBs. For further information on AOI systems for assembled PCBs, see Item 4 Information on the Company Business Overview The Company's Products Assembled PCBs.

In 1998, the Company entered into an agreement with Valor Computerized Systems Ltd. ( **Valor** ), an Israeli corporation, for the formation of a joint venture with respect to CAM software for PCB fabrication

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applications. The joint venture, FrontLine P.C.B. Solutions Limited Partnership ( **FrontLine** ), is owned equally by the Company and Valor and combines the former CAM operations of the Company and Valor. See Item 4 Information on the Company Business Overview The Company s Products Bare PCBs. The Company s interest in FrontLine is presented in the Company s financial statements by the proportionate method of consolidation. See Note 3 to the Consolidated Financial Statements listed in Item 18. Non-financial information presented herein, such as number of employees and properties utilized by the Company in its operations, does not include information as to FrontLine.

In 1999, the Company acquired all the outstanding shares of KLA Acrotec Co. Ltd. (which was later renamed Orbotech Display Pacific Ltd. ( **ODP** )), a Japanese company then engaged in the design, development, manufacture and marketing of FPD-AOI systems. ODP has subsequently been merged with and into the Company s wholly-owned subsidiary, Orbotech Japan Ltd. This acquisition significantly strengthened the Company s presence in the FPD industry, enabled more efficient deployment of the combined research and development resources of Orbotech and ODP thereby facilitating the development of increasingly sophisticated FPD-AOI systems, increased the Company s proximity to customers in Japan and throughout the Pacific Rim and resulted in an overall improvement in service to, and products for, its customers worldwide. For further information on FPDs, see Item 4 Information on the Company Business Overview The Company s Products FPDs.

In June 2001, the Company formed a corporate venture fund, Orbotech Technology Ventures Limited Partnership (the **Fund** ), to develop and expand opportunities for growth and to further strengthen the Company s overall position within the electronics industry. The Fund, which is wholly-owned by the Company, provides financing to companies which have technologies or products that may complement the Company s long-term business strategy. As at December 31, 2002, the Fund had invested approximately \$5.1 million, and had committed to further equity investments totaling approximately \$4.3 million, in three private Israeli companies. In addition, as at that date, the Company had directly invested a total of approximately \$2.8 million in an equity investment in a fourth private Israeli company.

*(c) Recent Major Expenditures*

During the period from January 1, 2002 to December 31, 2002, the Company s capital expenditures totaled approximately \$4.6 million (compared to \$9.3 million during 2001 and \$11.2 million during 2000), of which approximately \$3.3 million (compared to \$5.6 million during 2001 and \$7.9 million during 2000) was expended at or upon the Company s facilities in Yavne, Israel, and approximately \$1.3 million (compared to \$3.7 million during 2001 and \$3.3 million during 2000) was expended upon various facilities of the Company s subsidiaries, primarily outside Israel. Of these expenditures, approximately \$3.4 million during 2002 (compared to \$5.3 million during 2001 and \$9.8 million during 2000) was for capital equipment and leasehold improvements and the balance of approximately \$1.2 million (compared to \$4.0 million during 2001 and \$1.4 million during 2000) was related to information technology. During 2002 the Company did not make any significant capital divestitures nor are any such divestitures in progress. Other than further capital expenditures of the types and consistent with the amounts described above, there are no significant capital expenditures in progress by the Company.

During January 2001, the Company exercised an option to acquire the remaining equity interest in Orbotech-Schuh and paid approximately \$13.3 million. Also, during March 2001, the Company entered into an agreement for the purchase of certain inspection-related intellectual property owned by certain subsidiaries of Brown & Sharpe Manufacturing Company, for approximately \$2.5 million (the **SIS Acquisition** ).

All of the above expenditures were paid from internally generated funds.

*(d) Miscellaneous*

## Edgar Filing: ORBOTECH LTD - Form 20-F

The Company's corporate headquarters, executive and registered offices and principal research and development, engineering and manufacturing facilities are located at Sanhedrin Boulevard, North Industrial

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Zone, Yavne, Israel. The Company's postal address and its telephone and facsimile numbers at that facility are, respectively, P. O. Box 215, Yavne 81101, Israel, +972-8-9423533 and +972-8-9438769. The Company's internet address is: [www.orbotech.com](http://www.orbotech.com), where its Annual Report on Form 20-F, current reports on Form 6-K and certain other SEC filings made by or relevant to the Company may be accessed via the SEC Filings hyperlink contained on the Investors' section.

The Company's agent for SEC matters in the United States is Orbotech, Inc., whose headquarters are located at 44 Manning Road, Billerica, Massachusetts 01821.

There have been no public takeover offers by third parties with respect to the Company or by the Company during the last or current fiscal years.

### ***4.B Business Overview***

#### ***(a) General***

Orbotech is principally engaged in the design, development, manufacture and marketing of yield-enhancing, production support solutions for specialized applications in the supply chain of the electronics industry, primarily for PCBs and FPDs. The Company is a world leader in the design, development, manufacture and marketing of AOI and process control systems for bare PCBs and for FPDs and of imaging solutions for PCB production, and is one of a number of leading providers of AOI systems for assembled PCBs. In addition, the Company markets CAM solutions for PCB production and, through its subsidiary, Orbograph, develops and markets automatic check reading software to banks and other check processing organizations. The Company derives a significant portion of its revenues from the service and support of its products.

The Company's AOI systems use Orbotech's proprietary machine vision, electro-optics, precision mechanics, artificial intelligence and imaging technology to detect, automatically, flaws and defects in products being manufactured or assembled by its customers. These systems are designed to help increase the yield and cost effectiveness of customers' production processes. In addition, through its AOI systems for bare PCBs and imaging solutions, and the CAM solutions which it markets, the Company provides its PCB manufacturing customers with comprehensive solutions which allow automation and integration of the design, tooling, production data and inspection needs associated with PCB production. The Company believes that its PCB-AOI customers generally view AOI as an integral part of the manufacturing process rather than as a dissociated post-manufacturing step. The Company's FPD-AOI systems detect defects in FPDs and, by using automatic classification tools, also identify flaws occurring within the FPD manufacturing process. This enables manufacturers to ascertain the source of those flaws as early as possible during the manufacturing process which, in turn, increases production yield and facilitates preventative actions that can reduce the recurrence of defects in the future.

Orbograph's data conversion software solutions use Orbotech's proprietary machine vision and artificial intelligence to enable banks and other check processing organizations to automate their check processing operations, thereby reducing manual labor costs and increasing their overall cost effectiveness.

The Company currently has two reportable operating segments: Production Support Solutions for the Electronics Industry, which, in 2002, accounted for approximately 96% of the Company's revenues; and Automatic Check Reading, which, in 2002, accounted for approximately 4% of the Company's revenues. See Note 14a to the Consolidated Financial Statements listed in Item 18 for a description of each segment and information as to segment revenues, operating income or loss, assets and related data.





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### ***(b) Strategy***

The Company's business strategy includes the following elements:

#### ***(i) Strengthen and Expand Position in the PCB and FPD Industries***

The Company seeks to strengthen and expand its position in the PCB and FPD industries by: (a) preserving its technological advantages through the continuing enhancement of current generations, and the development of new generations, of PCB and FPD AOI and process control systems, imaging products and CAM solutions, to meet the needs of bare and assembled PCB manufacturers and FPD manufacturers as their products become increasingly complex; (b) maintaining its close working relationships with its customers, which include leading electronics manufacturers, to enhance the Company's ability to anticipate technological trends at an early stage and to design products which meet customers future needs; and (c) where appropriate, maintaining and expanding its worldwide marketing, customer support and service network.

#### ***(ii) Apply Proprietary Technologies***

The Company intends to continue developing its proprietary machine vision, electro-optics, precision mechanics, artificial intelligence and imaging technologies for use in other applications both within and outside the electronics industry. The Company also intends to leverage its technology and expand its technological base through joint ventures with other companies and through acquisitions.

#### ***(iii) Leverage Marketing, Distribution and Support Infrastructure***

The Company intends to continue to utilize its extensive worldwide marketing and distribution channels and customer support capabilities, as well as its considerable accumulated experience in the marketing and sale of capital equipment and software, for the introduction and marketing of additional products both within and outside the electronics industry. The Company believes that its worldwide marketing and support network, with more than 550 employees in over 30 locations outside of Israel, and its experience in the marketing and sale of complex systems, afford it advantages over its competitors.

### ***(c) The Company's Products***

The Company currently offers AOI products for specialized applications in the manufacture of bare PCBs, assembled PCBs and FPDs, as well as automatic check reading products enabled through its data conversion software. Each of these is discussed below.

#### ***(i) Bare PCBs***

General

The vast majority of electronic equipment uses PCBs, which are the basic interconnecting platforms for the electronic components which comprise most electronic equipment. PCBs contain the electronic circuitry required to interconnect the components which are subsequently mounted on them and which, when operating together, perform a specified function. An assembly of one or more mounted PCBs working together forms an essential part of most electronic products. These include computers, hand-held electronic devices such as cellular telephones, pocket computers and personal digital assistants ( **PDA** s), consumer electronic and automotive equipment, telecommunications equipment, industrial and medical equipment and military and aerospace applications.

PCBs are manufactured through a series of complex steps. Generally, a board made of fiberglass (or other material with insulating qualities) is laminated with a conducting material. Holes are then drilled in a specific pattern into the board, either mechanically or by means of a laser beam, and the inner part of each hole is plated with conducting metal. The board is then coated with a thin layer of light-sensitive material ( **photoresist** ). A transparent film containing the desired circuitry pattern corresponding to the drilled pattern on the board ( **production phototool** ), which has been either copied from an artwork master or produced directly by a photoplotter connected to a computer-aided design/computer-aided manufacture ( **CAD/CAM** ) data base, is

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then laid on the photoresist. The board is then exposed to light, which transfers the conductor pattern from the production phototool to the photoresist. Alternatively, the conductor pattern may be transferred directly onto the photoresist without the use of a production phototool, using laser-based direct imaging technologies. Subsequent development of the photoresist and a chemical etching process leave the desired conducting metal pattern printed on the board after excess conducting material is removed. PCBs may be single-sided or double-sided, and more complex PCBs may be multilayered. Multilayered boards comprise the largest segment of the PCB industry.

PCBs are susceptible to conductor defects, such as electrical shorts, open circuits and insufficient or off-measure conductor widths, which may impair or interfere with the electrical interconnections between electronic components mounted on the finished boards. Inspection is required throughout PCB production to identify such defects, which are then repaired, if possible. Early detection of these defects, particularly in the case of multilayered boards where PCB layers are subsequently embedded inside the finished board, increases the possibility of successful repair and reduces the number, and therefore the overall cost to the manufacturer, of unusable boards.

The ongoing trend towards the more complex electronic components which are used in sophisticated devices such as mobile telephones and PDAs, requires the production of high-density PCBs with finer conductor lines, reduced spacing between those lines, smaller holes and multiple layers. For such complex, multilayer boards, production yield drops dramatically as the number of likely defects increases. The Company's PCB-AOI products are of particular value to manufacturers of fine line and multilayered PCBs.

Another aspect of PCB manufacturing which may benefit from automated inspection is interconnecting devices for silicon chips. These are sometimes called IC (interconnecting) substrates, packaging substrates or chip carriers. After the production of silicon chips, the finished silicon die must be interconnected with other electronic components in order to perform their desired functions. This process may be performed by various technologies and through various substrates and methods, such as wire bonding to ball grid arrays ( **BGA** s), or direct bonding to the desired circuit pattern on PCBs or multichip or other modules. These substrates are also susceptible to various defects, such as plating defects, off-measure lead dimensions or surface defects which, if not detected prior to interconnection to the silicon die, may result in scrapping of the package together with the silicon die.

### Overview of Bare PCB Product Lines

The Company's bare PCB product lines consist of: (i) PCB-AOI systems; (ii) verification and repair stations; (iii) imaging products; and (iv) through its 50% interest in FrontLine, CAM systems for PCB production.

PCB-AOI systems are computerized, electro-optical systems for inspection and identification of defects in the artwork design master, production phototools and PCBs at various stages of production. Each of the Company's PCB-AOI systems consists of an image acquisition unit and an image processing unit. The image acquisition unit includes a moving platform carrying the PCB or artwork being inspected, and a scanning unit which acquires an image of the board, digitizes it and transmits it to the image processor. The image processor enhances and processes the image to allow efficient analysis and interpretation of the acquired images. The proprietary structure of the electronic logic unit enables parallel processing, a requirement for performing defect detection tasks in real time, which, in turn, is one of the keys to attaining the economical throughput achieved by the Company's systems.

Certain of the Company's PCB-AOI systems incorporate several parallel methods of inspection, utilizing pre-programmed algorithms and data stored in a CAD/CAM database (such as the CAM workstations of FrontLine or other CAM systems) to maximize the probability of defect detection and minimize the rate of false calls. These systems may differ from each other with respect to the image acquisition technologies they utilize. Certain types of PCBs, notably those based on inorganic materials, can only be inspected with reflective illumination, while other types, particularly those with a matte metal surface or extensive conductor surface



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contamination, are better inspected using fluorescent technology through laser imaging. The Company manufactures PCB-AOI products which can respond to either of these needs: the Company's Vision series use laser imaging to cause fluorescence of the laminate and the Company's other PCB-AOI series use reflective illumination. The Company's PCB-AOI systems can easily be integrated into the production processes of most PCB manufacturing facilities, are designed for flexibility, easy upgradability, operational simplicity and ease of maintenance and do not generally require highly specialized skills or experience to operate.

Verification and repair stations enable manufacturers to obtain an accurate picture of the defects occurring at various stages of production and, where possible, repair them without interrupting the inspection process. This is of value to manufacturers since PCBs in which defects are detected must be either scrapped or repaired, depending upon the nature of the flaw. In addition, these process tools provide statistical and other information which may be useful to manufacturers in adapting and tailoring their manufacturing processes so as to reduce the recurrence of such defects in the future. Since the verification process involves sorting of critical defects from false alarms and repair of the panel, it is generally performed separately from inspection.

Imaging solutions include laser plotters/scanners and direct imaging. Laser plotters/scanners provide PCB manufacturers with the capability to transform, within a few minutes, circuit designs on electronic media or design data retrieved from CAM databases into accurate, reliable artwork (production phototools). Direct imaging eliminates the need for exposing photoresist through a production phototool, by enabling the transfer of digital image data directly from the electronic media on to the photoresist. This translates into fewer manufacturing steps, lower material costs and greater accuracy and layer-to-layer registration. The Company believes that direct imaging technology will enable the manufacture of denser, more sophisticated PCBs, by reducing manufacturing costs significantly through the elimination of artwork costs and the scrap created by contact printing.

CAM solutions are designed for application in the PCB pre-production phase to facilitate automation and integration of the design, tooling, production data and inspection needs associated with PCB production. The Company's products include archiving and engineering software solutions which streamline the transfer of complex designs from the designer of the PCB to the production floor, and enable system operators to perform a wide range of data-related operations. The Company's CAM solutions are offered through FrontLine, which also supports the pre-existing installed base of CAM products of both the Company and Valor. The Company has also entered into certain marketing arrangements with FrontLine.

In 2002, the Company's bare PCB product lines accounted for approximately \$129.4 million of revenues (including approximately \$52.0 million related to service and support of those products), representing approximately 60% of the Company's revenues. This compared with approximately \$202.0 million of revenues (including approximately \$63.8 million related to service and support of those products), representing approximately 67% of the Company's revenues, in 2001, and approximately \$279.0 million of revenues (including approximately \$66.3 million related to service and support of those products), representing approximately 75% of the Company's revenues, in 2000.

### Bare PCB Products

*Vision Series.* The Company's Vision series of PCB-AOI systems is designed for the inspection of PCBs for which fluorescent technology is more suitable. The Vision-309 system is designed to inspect lines down to 2 mil in width and can inspect more than 1,200 panel sides per eight hour shift of 18 x 24 PCBs containing lines 5 mil in width.

*InSpire Series.* The InSpire series, which was introduced in 1998, is designed to meet the critical cost, quality and time-to-market challenges of traditional, mid- to high-volume PCB production, by offering superior detection, very high and reliable throughput and significantly reduced labor requirements. The InSpire-9060 system features fully automated panel handling and achieves scan speeds of up to 210 sides per hour on an



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18 x 24 panel. The system contains relatively few moving parts and electronic components, which increases its reliability and reduces overall maintenance requirements. Customers may select either the Company's integrated automation solution, or individual automation modules compatible with the InSpire-9060 system and which are available from both the Company and third party suppliers.

*SK Series.* The Company's SK series, which was introduced in 2000, provides particularly cost-effective inspection for process sampling and mid-volume mainstream applications at line widths down to 1.8 mil. This series incorporates an integrated verification capability which makes it effective for small batch or in-process sampling inspection. By using a built-in pen-style ink marker, in combination with the system's charge coupled device video camera, the user is able to view, verify, mark, re-classify and sort panels in an on-line mode prior to sending them for repair, thereby resulting in more efficient use of system and operator time, verification cost savings and reduced panel handling.

*ICP Series.* The ICP series, introduced in 2001, has been designed for final inspection of the outer layers of IC substrates after the application of solder mask and gold plating. The ICP-8060 AOI system facilitates product quality and an overall reduction in operating costs, through the combination of its rigorous defect detection capabilities and generally low false call rate. The system is capable of scanning a variety of products, including BGAs, chip scale packaging, FlipChips and multi-chip modules (MCMs), regardless of substrate width, and features a continuous, fully automatic inspection cycle with a multi batch (zero loading) option. It also incorporates a detection sensitivity control mechanism which is programmable for detection criteria for different functional zones, and its inspection throughput is maximized by the system's wide scanning capability. The ICP-8060 offers a high level of operational flexibility, including straightforward and rapid set-up and shifting between products, and features an innovative handling system incorporating vacuum carriers and a sophisticated programmable sorting system.

*InFinex Series.* The Company's InFinex series, which was introduced in 2002, enables the high-volume inspection of advanced packages (such as chip carriers), ultra fine-line designs (down to 15 micron line widths) and advanced mainstream PCBs. The series employs specialized morphology based algorithms to facilitate the detection of extremely fine defects in critical, hard-to-inspect areas, including wire and FlipChip bonding pads, resulting in accurate detection and a low rate of false calls on even the most complex design patterns. The series includes systems which are capable of scanning 45 sides per hour at 1 mil line widths.

*Spiron Series.* The Spiron series, which was introduced in the first quarter of 2003, includes many features similar to those of the InSpire series. However, the Spiron systems contain a manual loading mechanism and are therefore generally better suited for manual mass-production. The Spiron-8800 incorporates a dual loading table and is capable of throughput of up to 200 sides per hour in 5 mil line width. The dual loading table enables the operator to perform on-line verification of a panel which has just been inspected, concurrently with the inspection of the next board. This process, known as VIP (verification in parallel), results in a single AOI solution, incorporating both inspection and verification leading to a more efficient workflow, significant cost and labor savings, reduced panel handling and, ultimately, improved yield.

*Verification and Repair Stations.* The Company's current series of verification and repair stations is the VRS-5, which provides the operator with a crisp and magnified color image of the possible defect, as well as the image of the reference, which is essential for verification of high-density PCBs. It has been designed to maximize accuracy and throughput and to minimize floor space and operator fatigue and error. The operator defines critical defects, to which the VRS-5 automatically allocates priority so as to avoid repairing other defects on a panel that will later be scrapped. The VRS-5 communicates with the Company's PCB-AOI systems, from which it directly and automatically retrieves defect data files of the panel being inspected. The output of the VRS-5 can then be used by the customer for statistical analysis.

*Laser Plotters.* The Company's current series of external drum laser plotters is the Image LP7008 family. The 48-beam imaging technology incorporated in the LP7008 enables it to achieve very high plotting speeds. The





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main advantages of external drum laser plotters are the short distance between the laser optics and the media, which results in more accurate features, higher resolution and geometric accuracy and the ability to accommodate large size films. The Image LP7008 laser plotter is capable of plotting in three resolutions: 4,000 dots per inch, 8,000 dots per inch and, for jobs requiring even greater fineness and accuracy, 16,000 dots per inch. It allows the operator to enter data for a number of plotting jobs, while leaving the plotter unattended to load films of different sizes and types on to the drum automatically and to plot and unload the finished artwork, all under light-tight, dust-free conditions.

*Direct Imaging.* The Company's initial direct imaging project, originally conducted through the DI Joint Venture, relates to the development of an advanced laser-based direct imaging system for use in the manufacture of PCBs at full production rates. The DP-100, a production-ready, direct imaging solution enabling the production of fine feature PCBs, was introduced by the Company in 1999. The system incorporates sophisticated optics allowing the exposure of an entire panel in one scan, thereby saving time and increasing yields. The DP-100 utilizes advanced digital techniques to enable wider process latitudes, digital image scaling and precise side-to-side registration. The single scan-line technique, used to image the entire panel, provides uniform exposure even on large panel surfaces. Sophisticated filtering mechanisms and fewer process steps reduce external contaminants and handling defects. The DP-100 is capable of achieving effective imaging rates of 120 sides per hour in manual operation mode.

*CAM Solutions.* FrontLine's InGineering line is comprised of a suite of intelligent and fully integrated products for automating the planning and tooling pre-production processes involved in PCB manufacturing. The line includes: the Genesis 2000, a leading CAM pre-production system providing optimized CAM by means of full pre-production automation for PCB fabricators; the InPlan, a rules driven manufacturing process planning system integrated with a central, open database; the InMind, a central repository-engineering database that synchronizes all users allowing them to share the same data; e-quote, an innovative, intelligent, open quotation system for the PCB industry, combining the power of knowledge-based cost engineering with automatic Genesis 2000 fabrication analysis and the internet; ODB++ Communicator, and ODB++ Messenger and Viewer, a data transfer format enabling all staff members, including the tooling department, engineering, production, sales and marketing personnel, to share ODB++ information; and the STAR 1000, a data management and archiving system.

### (ii) *Assembled PCBs*

#### General

Once manufactured, bare PCBs are then mounted with the electronic components needed to perform the specified tasks, after which process they are commonly referred to as assembled (or populated) PCBs. There are three main steps in the assembly of surface-mount devices. The first step, solder paste printing, is the application of solder paste on every contact point of the PCB. The solder paste will later be reflowed to form the solder joint. The second step, component placement, is the actual placement of the components on the PCB. The last step, reflow, is the process of melting the solder paste and cooling it to form a solder joint. Inspection, either manual or automated, is performed after certain or all of these steps. As PCB assemblies become smaller and denser, manual inspection becomes increasingly time consuming and inefficient, resulting in higher manufacturing costs, lower yields and more product returns.

#### Overview of Assembled PCB Product Lines

The Company's assembled PCB product lines consist of: (i) AOI solutions for each production stage of assembled PCBs; (ii) verification and repair stations; and (iii) process control tool solutions.

The Company's assembled PCB-AOI solutions are computerized electro-optical systems comprising either two or three dimensional image acquisition methods for the identification and inspection of defects and process deviations at various stages of the manufacture of assembled

PCBs. Each of these solutions is designed to work

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in either in-line or off-line mode and can support high-volume production. In addition, when supplemented with specialized software developed and marketed by the Company, these solutions can also support prototype (also known as high-mix), or new product introduction (NPI) production, which is utilized mainly in the introduction of new products. Other specialized software produced and marketed by the Company enables these systems to inspect the press-fit connector pins located in the backplane of an assembled PCB.

In 2002, the Company's assembled PCB product lines accounted for approximately \$19.9 million of revenues (including approximately \$1.7 million related to service and support of those products), representing approximately 9% of the Company's revenues. This compared with approximately \$24.5 million of revenues (including approximately \$1.7 million related to service and support of those products), representing approximately 8% of the Company's revenues, in 2001, and approximately \$23.4 million of revenues (including approximately \$0.9 million related to service and support of those products), representing approximately 6% of the Company's revenues, in 2000.

### Assembled PCB Products

*Trion Series.* The Company's principal products for the inspection of assembled PCBs are in-line and off-line, post-paste, post-placement and post-solder inspection systems, called the Trion 2000 family, introduced in 1999. This family is comprised of inspection systems varying in throughput, inspection stage at the surface mount technology (SMT) line and price. The systems all provide high level defect detection and repair cycles as well as accurate process data for fault prevention at the critical stages of post-paste, post-placement and post-solder inspection, thereby improving yields of even the most complex SMT, through-hole and mixed technologies. The Trion 2000 Xpress, introduced in 2002, has been developed to meet the requirements of manufacturers of medium to large sized, complex, assembled PCBs, such as those used in personal computers, notebook motherboards or telecommunication transmission stations. The Trion 2000 HD (high density), also introduced in 2002, has been developed, in light of the growing trend within the electronics industry toward miniaturization, to respond to the requirements of manufacturers of small, complex, assembled PCBs such as those used in cellular telephones and PDAs.

*VT Series.* The VT 9000 family of AOI systems was also introduced in 2002, and has been designed to address the requirements of mainstream assembly technology by providing lower cost inspection solutions which support high volume production in small to medium sized manufacturing facilities. These systems support a similar product mix to the Trion Xpress, such as motherboard, controller and automotive applications. During 2002, the Company introduced a software upgrade which expands the capabilities of the Trion 2000 and VT 9000 AOI systems by enabling them to support NPI capabilities.

*Verification and Repair Stations.* The Trion 2000 and VT 9000 verification and repair stations provide rapid repair cycles by means of their clear and easy-to-use graphic user interface. They also offer accurate data for process control. The ergonomic design of the repair stations facilitates the location of defects, either on screen or with a laser pointer that pinpoints failures on the PCB. The stations operate in either fully automated in-line configuration, or in off-line mode.

*Process Control Tools.* The Company's suite of process control tool solutions, called the Advisor products, consists of: the Quality Process Control (QPC), which provides real time statistical process control, processes statistical data and visualizes inspection results, enabling manufacturers to identify undesirable process trends and problems; the Optigraf™, a data analysis application which uses AOI and verification and repair station results for data input, enabling extensive monitoring and reporting of the PCB assembly process; and the Process Control-and-Capability Module (PC<sup>2</sup>M) packages for measuring placement machine capability in post-reflow AOI.

(iii) FPDs

General

FPDs are presently used as display screens for laptop and desktop computers, digital telephones, car navigation systems, video cameras, televisions and a variety of other devices for technical, medical, military,

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aerospace and consumer electronics applications. FPDs offer various advantages over cathode ray tubes ( **CRT** s), including the convenience associated with their smaller physical dimensions and lower weight, and their relatively low levels of radiation and heat emission. The significant increase in the replacement of desktop CRTs by FPDs for use in computers in recent years has also been due, in part, to the reduction in FPD unit costs resulting from technological improvements in FPD manufacturing processes. The Company anticipates that there will be a further movement towards the replacement of CRTs by FPDs for computers, as well as for mid-size wall television sets for home use, audio visual applications and other electronic devices and applications.

The most common FPD technology currently in use is the thin film transistor ( **TFT** ) liquid crystal display ( **LCD** ), and the Company believes that this LCD technology will maintain its position of major importance in the foreseeable future. TFT LCDs, which are also known as active matrix LCDs, enable the production of higher resolution displays which provide very high-quality performance. They have almost completely replaced the lower-end passive matrix LCDs for use in mainstream applications such as laptop screens. Desktop monitors for personal computers, which have become one of the most important applications for FPDs, are manufactured using only active matrix TFT LCDs.

A typical active matrix LCD consists of two transparent substrates (normally glass) separated by liquid crystal material. On one of the substrates an active array of transistors is built through a complex, multilayer photolithographic deposition process similar in many ways to semiconductor production. On the other substrate a color filter is attached. There are three transistors, one for each of the red, green and blue components of each picture element (commonly known as a pixel ). In a typical XGA-quality color active matrix LCD there are a total of 2,360,000 transistors with geometric line widths for each transistor of approximately five microns. The color filter enables the display to attain color capability by selectively filtering out the light emissions from each multi-transistor multi-color pixel array to produce the desired color mix on the display.

The technology traditionally utilized in producing the LCD rear panel, and the TFTs incorporated into them, is known as a-Si or Amorphous Silicon , which refers to the material from which the active portion of the transistors is manufactured. Recently, a new technology, Low Temperature Polysilicon ( **LTPS** ), has emerged into mainstream LCD manufacturing and is, to some extent, displacing a-Si as the predominant LCD manufacturing process. Although LTPS requires more processing steps, as well as additional and higher resolution inspection, than Amorphous Silicon, it enables significantly better performance of the final LCD product. In addition, it has the advantage of allowing for the integration of non-display components on to the display glass, which can have the effect of reducing the number of parts required to be assembled in the final product. The Company believes that, due to manufacturers very stringent technical requirements with respect to LTPS inspection, Orbotech s LCD-AOI systems are currently the only such systems in use for LTPS inspection.

FPDs are susceptible to various defects, many of them resulting from the photolithographic and deposition processes mentioned above. Detection of these defects during the production process allows manufacturers to improve that process by enabling them to avoid the expense of further costly materials (which represent a substantial percentage of total costs), to repair defects, if possible, before they become inaccessible due to further manufacturing processes and to improve yields.

The inspection of LCDs poses distinct technological challenges due to the transparent materials used for some conductors and insulators, their multi-layered structure and high-density features and the fine nature of potential defects. LCD inspection must also match the high production speeds of LCD facilities. These technological challenges are becoming more acute as LCDs become increasingly complex and customer requirements move from existing SVGA displays (600 x 800 lines) to higher resolution XGA displays (796 x 1,024 lines) and, in the future, to SXGA displays (1,024 x 1,280 lines), thereby increasing the number of pixels utilized and the complexity of manufacture.

### Overview of FPD Product Lines

The Company s FPD product lines consist of: (i) FPD-AOI systems for LCD products; and (ii) process control tool solutions.



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In 2002, the Company's FPD product lines accounted for approximately \$58.2 million of revenues (including approximately \$7.1 million related to service and support of such products), representing approximately 27% of the Company's revenues. This compared with approximately \$69.4 million of revenues (including approximately \$9.1 million related to service and support of such products), representing approximately 23% of the Company's revenues, in 2001, and approximately \$65.1 million of revenues (including approximately \$6.2 million related to service and support of those products), representing approximately 18% of the Company's revenues, in 2000.

**FPD Products**

*FPI-7000 Series.* The FPI-7000 series of systems employ an innovative image acquisition system which enhances the inspected material contrast thereby enabling the inspection of a wide variety of layers. The FPI-7090, which was introduced in 1999, is designed to handle glass substrates of up to 730 x 920 mm (known as the fourth generation size). In 2001, the Company introduced the FPI-7590 to support fifth generation glass substrates of up to 1,100 x 1,300 mm in size.

*FPI-6000 Series.* The FPI-6000 series of AOI systems offer high sensitivity at rapid inspection speed. In 1999, the Company introduced the 6090 LCD-AOI system for fourth generation size glass substrates and in 2001, it introduced the FPI-6590 to support fifth generation glass substrates at a very high resolution of 3 microns. These systems complemented and expanded the Company's existing range of LCD-AOI systems by broadening the scope of inspection solutions which the Company is able to offer to include engineering tool-process analysis for process setup.

*InVision Series.* In 2002 the Company introduced an in-line inspection system, the InVision series, which is designed to be integrated into process equipment so as to provide rapid feedback on process failures. The system, which expands and complements the Company's current line of AOI solutions for FPD production, is designed to inspect fifth generation glass in less than one minute, thereby enabling use of these systems directly in line with other advanced production tools. The InVision series is available in two models the Invision-8000 for detection of 10um defects and the Invision-8050 for detection of 5um defects. Both systems incorporate innovative inspection technology, including a specially designed air-float table for zero backside glass contact and smooth scan motion, as well as a multi-color solid-state light emitting diode illumination system.

*SuperVision Series.* Initial installations of the Company's new series of off-line, FPD-AOI systems, the SuperVision, are planned for the second quarter of 2003. The SuperVision 650 system is the first FPD-AOI system designed to support glass substrates of 1,550 x 1,850 mm (known as the sixth generation size). The system incorporates a highly innovative glass transportation technique based on air float technology, and its customized camera and new software architecture enable it to identify very small defects on large glass panels without compromising scan speed. The Company believes that the SuperVision series will be particularly suited to meet the needs of manufacturers of larger FPD panels, such as those used for wall television units.

*Process Control Tools.* In the first quarter of 2003, the Company introduced the EYES-2020, an enhanced process monitoring system providing very effective defect data analysis. It enables accurate process control, virtually in real time, and improves yields by counting, accumulating and analyzing AOI-generated defect data automatically. EYES-2020 also uses the data which it has collected to initiate certain parts of the AOI setup process of systems, thereby obviating the need for FPD manufacturers to devote other time and resources for that purpose. The Company believes that the combination of AOI and EYES allows FPD manufacturers to achieve very high quality, comprehensive and reliable process control.



*(iv) Automatic Check Reading*

**General**

Through Orbograph, the Company develops, and markets via system integrators and solution providers, automatic check reading products to banks and other check processing organizations. This represents the first

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application of the Company's machine vision and image processing technologies outside the electronics industry. By using Orbograph's automatic check reading products, customers substantially reduce their manual labor costs, while at the same time generally achieving greater accuracy than human operators. The Company believes that Orbograph is currently a leading provider of automatic check reading software.

Processing of the data contained on checks, which forms an integral part of the United States banking system, has traditionally been accomplished by means of human operators who are employed by banks, utility companies and other entities which regularly process large numbers of checks. After the end of each banking day, these operators visually read and manually key the relevant data into automatic processing systems, which must be completed within strict transit deadlines. When managed in this fashion, the process is necessarily labor-intensive, time consuming and subject to operator fatigue and human error.

According to information published in 2002 by the United States Federal Reserve, approximately 42 billion checks were then processed annually in the United States, compared with approximately 32 billion in 1979.

In 2002, the Company's check reading product lines accounted for approximately \$8.8 million of revenues (including approximately \$1.4 million related to service and support of those products), representing approximately 4% of the Company's revenues. This compared with approximately \$6.0 million of revenues (including approximately \$1.0 million related to service and support of those products), representing approximately 2% of the Company's revenues, in 2001, and approximately \$4.8 million of revenues (including approximately \$0.5 million related to service and support of those products), representing approximately 1% of the Company's revenues, in 2000.

### Check Reading Products

Orbograph's data conversion software drives its automatic check reading (or character recognition) products, which operate by acquiring or capturing the image of a check, identifying the amount (which in personal checks is usually handwritten and in commercial checks is usually machine generated) as well as other important information which it contains, and converting that image data into a computer readable, digital number.

*OrboCAR Series.* Orbograph's principal products are the OrboCAR (check amount recognition) suite of products which are designed to read, automatically, the courtesy amount (the numerical characters) as well as the legal amount (the alphabetical letters) handwritten or printed on checks. OrboCAR products are utilized in conjunction with the image-based check processing systems employed by banks and other check processing organizations. The OrboCAR series includes a range of products, varying in the accuracy and percentage of checks which they are capable of reading, but all OrboCAR products share common interfaces, thereby facilitating easy upgradability. During 2002, Orbograph introduced and commenced installation of the OrboCAR Accura, a check amount recognition product which achieves a considerably higher degree of accuracy than previous Orbograph products and than most human operators.

*OrboCAR Apex.* During 2002, Orbograph commenced installation of its OrboCAR Apex, an innovative product that provides a highly efficient solution to check data entry by using a combination of artificial intelligence and human intervention. This product is based on Orbograph's Key-Pay™, a patent-pending technology for web-based distributed processing.

*Data MindReader.* During 2002, Orbograph introduced its Data-MindReader, a product designed to extract useful information and data from check images. This may be of assistance to financial institutions both for marketing purposes and in detecting and uncovering fraud.

*(d) Marketing, Sales and Support*

The Company markets its products for inspection of electronic components and provides customer support through its wholly-owned subsidiaries in the United States, Europe, the Pacific Rim and Japan. Each subsidiary

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employs local marketing, sales and customer support personnel. Worldwide marketing efforts are coordinated by the responsible marketing managers, who are based at Company headquarters in Israel. Orbograph markets and sells its principal products through system integrators, principally in North America, who incorporate the Company's data conversion software into the automated check processing systems utilized by banks and other check processing organizations.

Approximately 140 people are engaged in the Company's worldwide sales and marketing efforts, which include participation in various trade shows and conventions, publications and trade press, demonstrations performed in Company facilities and daily contact with customers by sales personnel.

The Company installs, services and provides training to customers on all its products. In the case of its AOI systems, after a minimum amount of site preparation by the customer, installation of a typical system can normally be completed at the customer's site within a very short time after delivery. The Company's customer support representative installs and checks the system. As part of the installation procedure, the Company provides system documentation and simple training in maintenance and use to customers. In addition, for a fee, the Company offers customers service and maintenance contracts commencing after the expiration of the warranty period. Software, whether contained in optional features or forming an integral part of the functioning capacity of the system, is licensed. Software updates are typically included in the service fee.

At December 31, 2002, the Company employed 416 customer support personnel, stationed at 33 locations worldwide, to ensure prompt and efficient service. 50 persons were stationed at seven locations in the United States, 61 were stationed at seven locations in Europe, 211 were stationed at 17 locations in the Pacific Rim, 44 were stationed at one location in Israel and 50 were stationed at one location in Japan.

### ***(e) Production and Sources of Supply***

The Company's manufacturing activities for systems consist primarily of the assembly and testing of components and subassemblies which are acquired from third party vendors and subcontractors and then integrated into a finished system by the Company.

The Company utilizes subcontractors in Israel, the United States, Europe and Japan for the production of mechanical parts, optical components, castings and casings, electronic cabinets, PCB fabrication and a portion of the required electronic assembly.

Most electronic components are imported from the United States, Europe and Japan. The Company's production capacity is sufficient for its level of sales and permits the Company, in most cases, to ship products within one to three months of receipt of customer orders.

Certain key components and subassemblies included in the Company's systems are purchased from a limited group of suppliers. The Company currently purchases certain key components from single sources of supply including one in the United States for the high precision positioning systems incorporated in some of its AOI products. To date, the Company has been able to obtain sufficient units to meet its needs and does not foresee any short-term supply difficulty in obtaining timely delivery of any parts or components. However, an interruption in supply from any of these sources could disrupt production, thereby adversely affecting the Company's results. The Company generally maintains several months inventory of critical components used in the manufacture and assembly of its systems.

*(f) Competition*

Although the Company is a world leader in AOI systems for bare PCBs and for FPDs, it faces competition from a number of companies which either produce or are developing such systems. Most currently available AOI systems for PCBs use a varying combination of inspection methods, as do the AOI systems of the Company. The Company has responded to the competition with continued enhancements of its AOI product lines and it anticipates continuing to do so.

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During 2002, the Company faced increased competition for its FPD products, causing it to experience pricing pressure from customers. Korean and Japanese developers of AOI systems have recently introduced in-line and off-line FPD-AOI solutions which compete with the Company's InVision and FPI series. Although the Company believes that its solutions compare favorably with those of its competitors, there can be no assurance that customers will choose to purchase the Company's products.

Inspection solutions for assembled PCBs are currently offered by a comparatively large number of providers, some of which have broader product offerings targeted at the same customer base, and many of which are business units within companies of significantly greater size, and having access to substantially more capital and other resources, than does the Company. The Company anticipates that the number of providers will decrease, and that those companies which are able to develop and offer competitively priced inspection solutions furnishing superiority of performance and ease of handling, and to provide consistent and effective service and support of those systems to customers, will prove most successful.

The Company believes that, based upon their respective characteristics, such as automation, throughput, ease-of-use, image processing, editing capabilities, storage format, accuracy and speed, the performance capabilities of its imaging solutions and its AOI systems for use in the inspection of bare and assembled PCBs and in the inspection of FPDs, are competitive with similar products.

The Company also believes that in the future price will remain a principal competitive factor for its PCB and FPD products. However, other factors, including functionality and performance (e.g., speed, ease of use, accuracy and reliability), the development of improved products through research and development, customer support services and customer relations will continue to be of importance to these manufacturing customers.

Orbograph's automatic check reading products face competition in North America from a number of other providers of so-called intelligent character recognition solutions, some of which are larger in size and/or have more experience in the provision of such solutions than Orbograph.

The Company's competitors can be expected to continue to improve the design and performance of their products and to introduce new products with more competitive prices and performance features. Maintaining the technological and other advantages of the Company's products over those of its competitors will require a continued high level of investment by the Company in both research and development and operations. The Company believes it can maintain its competitive position by continuing to supply updated, state-of-the-art product features, by providing comprehensive after-sales support and by continuing to develop improved features to meet sophisticated customer needs. There can be no assurance that the Company will be able to continue to make such investments or that the Company will be able to achieve the technological advances necessary to maintain its current competitive advantages.

The Company believes that its extensive installed base and global network of sales and support offices, as well as the recognition it has attained with PCB and FPD manufacturers, and banks and other check processing organizations, place it in a strong competitive position with respect to its PCB, FPD and automatic check reading product lines.

*(g) Additional Considerations Relating to the Company's Operations in Israel*

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The Company is incorporated under the laws of the State of Israel, and its headquarters and production facilities are located in Israel. Although virtually all of the Company's sales are currently made to customers outside Israel, the Company is nonetheless directly influenced by political, economic and military conditions affecting Israel. Accordingly, any major hostilities involving Israel, a substantial decline in the prevailing regional security situation or the interruption or curtailment of trade between Israel and its present trading partners could have a material adverse effect on the Company's operations. Since the establishment of the State of Israel in 1948, a state of hostility has existed, varying in degree and intensity, between Israel and the Arab

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countries. Historically, Arab states have boycotted any direct trade with Israel and to varying degrees have imposed a secondary boycott on any company carrying on trade with, or doing business in, Israel. Although Israel has entered into certain agreements with Egypt, Jordan and Palestinian representatives, there have been continued and increasing difficulties in the negotiations with the Palestinians and no prediction can be made as to whether a resolution of past problems will be achieved or as to the nature of any such resolution. In addition, beginning in late September 2000, the overall relationship and security situation between Israel and the Palestinians has deteriorated significantly, being marked by frequent and escalating violence. To date, this has not had any material effect on the Company's business and results of operations, but there can be no assurance that it will not do so in the future.

Many of the Company's officers and employees in Israel are currently obligated to perform annual reserve duty in the Israel Defense Forces. In addition, virtually all such officers and employees are subject to being called for active military duty at any time under emergency circumstances. No assessment can be made of the full impact of such requirements on the Company in the future, particularly if emergency circumstances occur, and no prediction can be made as to the effect on the Company of any expansion of these obligations.

The Company benefits from certain government programs and tax legislation, particularly as a result of the Approved Enterprise status of substantially all of the Company's existing production facilities in Israel under the Law for the Encouragement of Capital Investments, 1959 (an **Approved Enterprise** and the **Approved Enterprise Law**, respectively). Pursuant to these programs and legislation a portion of the Company's income is taxed at reduced rates. See Note 10 to the Consolidated Financial Statements listed in Item 18. To be eligible for these benefits, the Company must continue to meet certain conditions. Should the Company fail to meet such conditions in the future, these benefits could be cancelled and the Company might be required to refund tax benefits previously received, if any, together with interest and linkage differences to the Israeli Consumer Price Index (the **Israeli CPI**). The Company also benefits from a new Government of Israel program under which it receives grants from the OCS for the development of generic technologies without incurring any royalty obligations. See Item 5.C(a) Research and Development, Patents and Licenses, etc. Research and Development Policy. There can be no assurance that these programs and tax legislation will be continued in the future or that the available benefits will not be reduced. The termination or reduction of such benefits (particularly those available to the Company as a result of the Approved Enterprise status of the Company's existing facilities in Israel) could have a material adverse effect on the Company's business and financial condition.

Israel is a member of the United Nations, the World Bank Group (including the International Finance Corporation), the European Bank for Reconstruction and Development and the Inter-American Development Bank. Israel is also a signatory to the General Agreement on Tariffs and Trade, which provides for reciprocal lowering of trade barriers among its members. In addition, Israel has been granted preferences under the Generalized System of Preferences from Japan. These preferences allow Israel to export the products covered by these programs either duty-free or at reduced tariffs.

Israel has entered into preferential Trade Agreements with the European Union, the United States, Canada, the European Free Trade Association and a variety of other countries. In recent years, Israel has established commercial and trade relations with a number of other nations, including Russia and China, with which it had not previously had such relations.

***4.C Organizational Structure***

The Company's wholly-owned subsidiary in the United States, Orbotech, Inc., maintains its headquarters in Billerica, Massachusetts, with a regional office in Tustin, California. The Company's European operations are coordinated from the headquarters of its wholly-owned subsidiary in Brussels, Orbotech S.A., and from regional offices in Paris, Manchester and Stuttgart. Orbotech Pacific Ltd. and Orbotech Asia Ltd., also wholly-owned subsidiaries of the Company, operate through their headquarters in Hong Kong and Orbotech Pacific Ltd. also





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operates from regional offices or subsidiaries in Korea, Taiwan, Singapore and China. The Company's wholly-owned subsidiary in Japan, Orbotech Japan Ltd., maintains its headquarters in Tokyo. The Company's principal Israeli subsidiaries, headquartered in Yavne, Israel, are Orbograph Ltd. and the Orbotech Technology Ventures Limited Partnership, of which the partners are the Company and Orbotech Technology Ventures Limited.

### ***4.D Property, Plants and Equipment***

The Company's administrative, manufacturing, research and development, corporate sales, marketing and customer support operations are conducted in and from leased premises located in Yavne, Israel, comprising a total area of approximately 249,000 square feet with an option to lease additional space. The lease is for a ten year period commencing in July 1997, and the Company has a right of first refusal to purchase the facility.

Additionally, the Company, generally through its subsidiaries, leases approximately 181,000 square feet of floor space outside Israel, which is used primarily in connection with sales, marketing and customer support. These leases expire on various dates from 2003 to 2011. Also, the Company, through its Belgian subsidiary, Orbotech S.A., owns an interest in real property which is used as its European headquarters.

The aggregate annual net rental for all of the Company's facilities in and outside Israel in 2002 was approximately \$6.2 million (compared to approximately \$5.7 million in 2001 and \$4.8 million in 2000). For further information, see Note 8 to the Consolidated Financial Statements listed in Item 18.

The Company has invested substantial sums in improving the leased properties which it occupies in order to adapt them to its various engineering and production activities. The majority of these improvements have been integrated into the leasehold facilities. At the present time the facilities available to the Company in Yavne, Israel, which include a new building completed and occupied during 2000, are approximately 70% utilized, generally on a one shift basis, in the course of the Company's normal operations and are considered to be adequate for such operations. The Company is not presently engaged in the construction or material expansion of any additional building at its Yavne facilities and has no present plans to relocate its facilities. The Company is not aware of any environmental issues that may affect its ability to use its facilities.

During 1997, the Company entered into negative pledge agreements with certain banks pursuant to which the Company has undertaken not to register certain charges on its assets in favor of third parties without the prior consent of such banks. See Note 8 to the Consolidated Financial Statements listed in Item 18.

## ***Item 5. Operating and Financial Review and Prospects***

### ***5.A Operating Results***

#### ***(a) General***

Orbotech is an Israeli corporation which has two reportable operating segments: Production Support Solutions for the Electronics Industry and Automatic Check Reading. The Company is principally engaged in the design, development, manufacture, marketing and/or service of yield-enhancing, production support solutions for specialized applications in the supply chain of the electronics industry. The Company's products for the electronics industry are primarily AOI and process control systems and imaging and CAM solutions, principally for application in the production of PCBs and FPDs. Through Orbograph, the Company also develops and markets to banks and other check processing organizations automatic check reading solutions enabled through its data conversion software.

The Company derives revenues from two sources: (i) sales of the Company's products; and (ii) services provided with respect to the Company's products. In 2002, 2001 and 2000, revenues derived from sales of products constituted approximately 71%, 75% and 80%, respectively, of the Company's total revenues, with the remaining revenues being derived from service for product support. During those periods, approximately 96%, 98% and 99%, respectively, of revenues from both product sales and service were derived from product lines related to its production support solutions for the electronics industry, and the balance from product lines related

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to automatic check reading. The Company expects that revenues from its products for inspection of electronic components and related services will continue to account for a predominant portion of total sales and service revenues in the near future. Most of the Company's inspection-related revenues are derived from repeat sales to existing customers, and the Company expects that repeat sales will continue to account for a significant portion of such revenues in the future. See Note 14a to the Consolidated Financial Statements listed in Item 18 for a description of each segment and information as to segment revenues, operating income or loss, assets and related data.

The currency of the primary economic environment in which the operations of the Company are conducted is the U.S. Dollar. Virtually all of the Company's sales are made outside Israel in non-Israeli currencies, mainly the U.S. Dollar, and most of its purchases of materials and components are made, and most marketing and service costs are incurred, outside Israel in non-Israeli currencies, primarily the U.S. Dollar. Thus, the functional currency of the Company is the U.S. Dollar.

### ***(b) Adoption of U.S. GAAP***

For each of the years up to and including the year ended December 31, 2001, the Company prepared its primary financial statements in accordance with Israeli GAAP, with a reconciliation to U.S. GAAP presented in a note to the financial statements. However, the Company elected, as from 2002, to change the basis of accounting used in its primary financial statements from Israeli GAAP to U.S. GAAP. The Company believes that since its shares are traded only in the United States and the majority of such shares are beneficially owned by United States persons, investors and other users of its financial statements would benefit if the primary financial statements were prepared in accordance with U.S., rather than Israeli, GAAP. Nevertheless, having been advised by the SEC that its staff does not object to the Company's so doing, the Company continues to account for FrontLine using the proportionate method of consolidation, including summarized footnote disclosures of the amounts proportionately consolidated, rather than the equity method as is called for under U.S. GAAP pursuant to Accounting Principles Board Opinion ( **APB** ) No. 18.

Unless otherwise stated, all financial data presented in this Annual Report on Form 20-F have been adjusted to give effect to the adoption by the Company of U.S. GAAP.

### ***(c) Critical Accounting Policies***

To improve understanding of the Company's financial statements, it is important to obtain some degree of familiarity with the Company's principal or significant accounting policies. These policies are described in Note 1 to the Consolidated Financial Statements listed in Item 18. The Company reviews its financial reporting, disclosure practices and accounting policies annually to ensure that the financial statements which are developed, in part, on the basis of these accounting policies provide complete, accurate and transparent information concerning the financial condition of the Company. As part of this process, the Company has reviewed the selection and application of its critical accounting policies and financial disclosures as at December 31, 2002, and it believes that the Consolidated Financial Statements listed in Item 18 present fairly, in all material respects, the consolidated financial position of the Company as at that date.

In preparing the Company's financial statements in accordance with U.S. GAAP, the Company's management must often make estimates and assumptions, which may affect the reported amounts of assets, liabilities, revenues, expenses and related disclosures as at the date of the financial statements and during the reporting period. Some of those judgments can be subjective and complex, and consequently actual results may differ from those estimates. For any given individual estimate or assumption made by the Company, there may be alternative estimates or assumptions which are also reasonable. However, the Company believes that, given the facts and circumstances before it at the time of making the relevant judgments, estimates or assumptions, it is unlikely that applying any such other reasonable judgment would cause a material adverse

effect on the

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Company's consolidated results of operations, financial position or liquidity for the periods presented in the Consolidated Financial Statements listed in Item 18.

The Company is also subject to risks and uncertainties that may cause actual results to differ from estimates and assumptions, such as changes in the economic environment, competition, foreign exchange, taxation and governmental programs. Certain of these risks, uncertainties and assumptions are discussed under the heading Cautionary Statement Regarding Forward-Looking Information and in Item 3.D Risk Factors.

The Company considers its most significant accounting policies to be those discussed below.

### *(i) Revenue Recognition*

The Company recognizes revenue from sale of products to end users upon delivery, provided that appropriate signed documentation of the arrangement, such as a signed contract, purchase order or letter of agreement, has been received, the fee is fixed or determinable and collectibility is reasonably assured. The Company does not, in the normal course of business, provide a right of return to its customers.

Installation and training are not considered essential to the product capabilities since they do not require specialized skills and can be performed by other vendors.

The Company grants its customers a warranty, usually for a period of six to twelve months, on systems sold. Upon revenue recognition, the Company defers a portion of the sale price and recognizes it as service revenue ratably over the warranty period. Service revenue in respect of the Company's systems is recognized ratably over the contractual period or as services are performed. Annual service fees are generally based on the list price of the Company's products. It has been the Company's experience that most of its customers elect to receive maintenance services from the Company on a continuing contractual basis after the conclusion of the warranty period.

The Company recognizes revenue from sale of software to end users upon delivery, provided that appropriate signed documentation of the arrangement, such as a signed contract, purchase order or letter of agreement, has been received, the fee is fixed or determinable, and collectibility is probable. When software is made available to customers electronically, it is deemed to have been delivered when the Company has provided the customer with the access codes necessary to enable immediate possession of the software. If collectibility is not considered probable, revenue is recognized when the fee is collected.

Maintenance revenues are comprised of revenue from support arrangements which include technical support and the right to unspecified upgrades on an if-and-when-available basis. Revenues from these services are deferred and recognized on a straight-line basis, over the life of the related agreement, which is typically one year.

### *(ii) Inventory Valuation*

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Inventories are valued at the lower of cost or market value. Cost is determined as follows: components on the moving average basis; labor and overhead on the basis of actual manufacturing costs. If actual market conditions prove less favorable than those projected by management, additional inventory write-downs may be required. Inventories are written down for estimated obsolescence based upon assumptions about future demand and market conditions. Likewise, favorable future demand and market conditions could positively impact future operating results if inventory that has been written down is sold.

### *(iii) Allowance for Doubtful Accounts*

The Company performs ongoing credit evaluations of its customers for the purpose of determining the appropriate allowance for doubtful accounts. In respect of sales to customers in emerging economies, the

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Company requires letters of credit from banks. The allowance for doubtful accounts is determined for specific debts the collection of which is doubtful.

### *(iv) Liability for Employee Rights Upon Retirement*

The Company does not have any obligations to its employees upon retirement which are not fully provided for in the Consolidated Financial Statements listed in Item 18. In accordance with labor laws and agreements in force with respect to its Israeli and Japanese employees, the Company has liability for severance pay upon retirement, and the Company fully records such obligations at each balance sheet date on an undiscounted basis, based on salary components which, in management's opinion, create entitlement to severance pay. The severance pay liability of the Company and its Israeli subsidiaries to their Israeli employees, based upon the number of years of service and the latest monthly salary, is partly covered by regular deposits with recognized pension funds, deposits with severance pay funds and purchases of insurance policies. See Note 7 to the Consolidated Financial Statements listed in Item 18.

The Company has not undertaken to provide any post-retirement health benefits to its employees.

### *(v) Taxes on Income*

Taxes on income are calculated based on the Company's assumptions as to its entitlement to various benefits under the Approved Enterprise Law. The Company's entitlement to such benefits is conditional upon its compliance with the terms and conditions prescribed in this law. In the event of its failure to do so these benefits may be canceled and the Company may be required to refund the amount of the benefits already received, in whole or in part, with the addition of Israeli CPI linkage differentials and interest.

Deferred income taxes are determined utilizing the asset and liability method based on the estimated future tax effects of differences between the financial accounting and tax bases of assets and liabilities under the applicable tax laws. Deferred income tax provisions and benefits are based on the changes in the deferred tax asset or tax liability from period to period. Valuation allowance is included in respect of deferred tax assets when it is considered more likely than not that such assets will not be realized. In the event that the tax assets are not realized, income tax expense would increase or, conversely, if the valuation allowance is overestimated, the Company would benefit from a future tax credit.

The Company may incur additional tax liability in the event of intercompany dividend distributions by its subsidiaries. Such additional tax liability in respect of non-Israeli subsidiaries has not been provided for in the Company's financial statements, as the Company does not expect these subsidiaries to distribute dividends in the foreseeable future.

Taxes which would apply in the event of disposal of investments in subsidiaries have not been taken into account in computing deferred income taxes, as it is the Company's intention to hold, and not to realize, these investments.

The Company intends permanently to reinvest the amounts of tax-exempt income of its Approved Enterprises and does not intend to cause dividends to be distributed from such income. Therefore, no deferred taxes have been provided in respect of such tax-exempt income.



(vi) *Amortization of Intangible Assets*

On October 27, 1992, the Company acquired all the ordinary shares of Orbot and subsequently merged with Orbot on January 1, 1993. The Merger was accounted for using the purchase method. In connection with the acquisition, goodwill in the amount of approximately \$16.3 million was recorded and, through December 31,

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2001, was amortized over a period of ten years. At December 31, 2001, \$1.3 million remained unamortized. As a result of subsequent acquisitions, the Company recorded goodwill and other intangible assets of approximately \$29.8 million in aggregate which, until the end of 2001, were being amortized over a period of five years from the respective dates of acquisition. At December 31, 2001, \$18.7 million remained unamortized.

As from January 1, 2002, pursuant to Statement of Financial Accounting Standard ( **FAS** ) No.142 of the Financial Accounting Standards Board of the United States (the **FASB** ), **Goodwill and Other Intangible Assets** , goodwill is no longer amortized but rather is tested for impairment annually. During 2002, the Company identified its various reporting units, which consist of its operating segments, and performed the necessary allocations of its intangible assets between goodwill and other intangible assets, mainly intellectual property. The Company has utilized expected future discounted cash flows to determine the fair value of the reporting units and whether any impairment of goodwill existed as of the date of adoption of FAS 142. As a result of the application of the transitional impairment test, the Company does not have to record a cumulative effect of accounting change for the estimated impairment of goodwill. The Company has designated September 30 of each year as the date on which it will perform its annual goodwill impairment test. On September 30, 2002, an impairment test was conducted on the unamortized goodwill pursuant to which it was determined that, as of the date of the impairment test, no impairment existed. Changes in the fair value of the reporting units following material changes in the assumptions as to the future cash flows and/or discount rates could result in an unexpected impairment charge to goodwill.

The Company's acquired intangible assets other than goodwill, comprised primarily of intellectual property, are being amortized on a straight-line basis over a period of five years, based on past experience. The amortization expense for 2002 totaled approximately \$2.5 million and is anticipated to total approximately \$2.6 million for 2003. If an event or a change in circumstances indicates that the carrying amount of such intangible assets may not be recoverable through undiscounted future cash flows, the carrying amount of these assets will be reviewed for impairment and, if necessary, written down to their estimated fair values.

See Notes 1i, 1j and 6 to the Consolidated Financial Statements listed in Item 18.

**(d) Recently Issued Accounting Pronouncements**

In April 2002, the FASB issued FAS No. 145, **Revision of FASB Statements No. 4, 44 and 64, Amendment of FASB Statement No. 13, and Technical Connections** . Among other amendments and rescissions, FAS 145 eliminates the requirement that gains and losses from the extinguishments of debt be aggregated and, if material, classified as an extraordinary item, net of the related income tax effect, unless such gains and losses meet the criteria in paragraph 20 of APB No. 30, **Reporting the Results of Operation Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions** . FAS 145 is partially effective for transactions occurring after May 15, 2002 and partially effective for fiscal years beginning after May 15, 2002. The Company does not expect the adoption of FAS 145 to have a material effect on its consolidated financial statements.

In June 2002, the FASB issued FAS No. 146, **Accounting for Costs Associated with Exit or Disposal Activities** . FAS 146 addresses financial accounting and reporting for costs associated with exit or disposal activities and rescinds Emerging Issues Task Force ( **EITF** ) No. 94-3, **Liability Recognition for Certain Employee Termination Benefits and other Costs to Exit an Activity (including Certain Costs Incurred in a Restructuring)** . FAS 146 requires that a liability for a cost associated with an exit or disposal activity be recognized when the liability is incurred. Under EITF 94-3, a liability for an exit cost as generally defined in EITF 94-3 was recognized at the date of the commitment to an exit plan. FAS 146 states that a commitment to a plan does not, in and of itself, create an obligation meeting the definition of a liability. Therefore, FAS 146 eliminates the definition and requirements for recognition of exit costs in EITF 94-3. It also establishes that fair value is the objective for initial measurement of the liability. FAS 146 is to be applied prospectively to exit or disposal activities initiated after December 31, 2002. The Company does not expect the adoption of FAS 146 to have a material effect on its consolidated financial statements.



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In December 2002, the FASB issued FAS No. 148, *Accounting for Stock-Based Compensation Transition and Disclosure* an amendment of FASB Statement No. 123 . FAS 148 amends FAS 123 to provide alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. In addition, FAS 148 amends the disclosure requirements of FAS 123 to require prominent disclosures in the financial statements about the method of accounting for stock-based employee compensation and the effect of the method used on reported results. The transition guidance and annual disclosure provisions of FAS 148 are effective for financial statements issued for fiscal years ending after December 15, 2002.

The Company has elected to continue accounting for employee stock-based compensation in accordance with APB 25 and related interpretations, and has applied the disclosure provisions in FAS 148 in the Consolidated Financial Statements listed in Item 18.

In November 2002, the FASB issued FASB Interpretation No. ( **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 elaborates on the disclosures to be made by a guarantor in its financial statements about its obligations under certain guarantees that it has issued and which are to be made in respect of product warranties. Disclosures required under FIN 45 are included in the Consolidated Financial Statements listed in Item 18; however, the initial recognition and measurement provisions of FIN 45 are applicable on a prospective basis to guarantees issued or modified after December 31, 2002. The Company does not expect the adoption of FIN 45 to have a material effect on its consolidated financial statements.

In January 2003, the FASB issued FIN No. 46, *Consolidation of Variable Interest Entities* . Under FIN 46 entities are separated into two categories: (i) those for which voting interests are used to determine consolidation (this is the most common situation); and (ii) those for which variable interests are used to determine consolidation. FIN 46 explains how to identify Variable Interest Entities ( **VIE** s) and how to determine when a business enterprise should include the assets, liabilities, non-controlling interests and results of activities of a VIE in its consolidated financial statements.

FIN 46 is effective as follows: for variable interests in VIEs created after January 31, 2003, FIN 46 shall apply immediately; for variable interests in VIEs created before that date, FIN 46 shall apply in the case of publicly traded entities as of the beginning of the first interim or annual reporting period beginning after June 15, 2003. The Company does not expect the adoption of FIN 46 to have a material effect on its consolidated financial statements.

In November 2002, the EITF reached a consensus on EITF Issue No. 00-21, *Accounting for Revenue Arrangements with Multiple Deliverables* . EITF 00-21 sets out criteria for whether revenue on a deliverable can be recognized separately from other deliverables in a multiple deliverable arrangement. The criteria consider whether the delivered item has stand-alone value to the customer, whether the fair value of the delivered item can be reliably determined and the rights of returns for the delivered item. EITF 00-21 is required to be adopted by the Company beginning January 1, 2004.

**Table of Contents***(e) Geographical Analysis; Worldwide Economic Situation; Cost of Revenues**(i) Geographical Analysis and Worldwide Economic Situation*

The following table sets forth the Company's sales and service revenues by geographic area for the periods indicated:

	Year Ended December 31,					
	2002		2001		2000	
	in thousands	% of total	in thousands	% of total	in thousands	% of total
<b>Sales</b>						
North America	\$ 16,800	11	\$ 40,000	18	\$ 65,600	22
Europe	9,500	6	30,200	13	32,000	11
Japan	27,200	18	45,400	20	45,500	15
Taiwan	41,900	27	53,600	24	88,400	30
China	29,800	19	33,500	15	22,200	8
Korea	16,300	11	13,500	6	33,800	11
Far East*	12,400	8	9,500	4	10,200	3
Other	400		600		700	
<b>Total Sales</b>	<b>\$ 154,300</b>	<b>100</b>	<b>\$ 226,300</b>	<b>100</b>	<b>\$ 298,400</b>	<b>100</b>
<b>Service</b>						
North America	\$ 16,100	26	\$ 23,600	31	\$ 26,900	36
Europe	9,700	16	12,900	17	12,800	17
Japan	8,700	14	10,000	13	8,600	12
Taiwan	13,100	21	14,600	19	11,400	16
China	7,000	11	5,900	8	2,600	4
Korea	4,000	6	5,300	7	4,600	6
Far East*	3,100	5	2,900	4	6,700	9
Other	400	1	400	1	300	
<b>Total Service</b>	<b>\$ 62,100</b>	<b>100</b>	<b>\$ 75,600</b>	<b>100</b>	<b>\$ 73,900</b>	<b>100</b>
<b>TOTAL</b>	<b>\$ 216,400</b>		<b>\$ 301,900</b>		<b>\$ 372,300</b>	

\* other than Japan, Taiwan, China and Korea.

Approximately 76% of the Company's revenues from equipment sales and service revenue during 2002 (compared to 64% during 2001 and 63% during 2000) were derived from the Far East, including approximately 26% from revenues in Taiwan, 17% from revenues in Japan, 17% from revenues in China and 9% from revenues in Korea. In addition, virtually all of the Company's revenues from its automatic check reading products were derived from sales in North America. The Company monitors developments in the financial markets and economies, including banking and currency difficulties, of all countries and regions in which it markets its products and their possible impact upon the Company. The decrease in sales and service revenues generated from North America and Europe during 2002 as compared with 2001 reflects, in part, the

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continuing migration of PCB manufacturing activities from North America and Europe to the Far East, and in particular to China, as manufacturers sought to take advantage of lower costs prevailing in the Far East. The Company believes that this decrease also reflects the underutilization of capacity experienced by, and the corresponding reduction in service revenues received from, North American PCB manufacturers.

The global electronics industry is continuing to contend with the effects of depressed economic activity which has extended into 2003, resulting in ongoing uncertainty and unsettled business confidence worldwide. Consequently, the Company's ability to foresee future changes in the total volume of orders for its products and services remains limited. The worldwide economic slowdown has continued to have a substantial impact upon

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the Company's results during 2002, and the ongoing uncertainties associated with both the economic situation and the financial markets and economies of those countries in which the Company markets its products, and the related possible reduction in demand for its products, means that past operating results may not necessarily be indicative of the future. Accordingly, the Company is not currently able to anticipate how such matters will affect its results during 2003, and no assurances as to future developments in respect of such matters can be given. See Item 5.D Trend Information.

*(ii) Cost of Revenues*

	Year Ended December 31,		
	2002	2001	2000
	<i>in thousands</i>		
Cost of Products Sold	\$ 78,400	*\$118,400	\$ 116,300
Cost of Services Rendered	51,900	65,100	65,900
<b>Total Cost of Revenues</b>	<b>\$ 130,300</b>	<b>\$183,500</b>	<b>\$ 182,200</b>

\* Includes the write-down of inventories of \$7.0 million in 2001 relating to excess inventories of raw materials for certain of the Company's PCB inspection products and \$14.2 million payable to the Government of Israel in settlement of all royalties (other than those of Orbograph) arising from sales after June 30, 2001 with respect to previous OCS grants to the Company. See Item 5.C(a) Research and Development, Patents and Licenses, etc. Research and Development Policy.

*(f) Effective Corporate Tax Rate*

The Company's income tax obligations consist of those of the Company in Israel and those of each of its subsidiaries in their respective taxing jurisdictions. Through December 31, 2002, the Company elected not to exercise the option available to it under Israeli tax laws to calculate its taxable income in Dollars. As a result, the Company's income tax obligations in Israel were based upon its earnings determined in Israeli currency on a real basis (having regard to the changes in the Israeli CPI) and not in Dollars, the functional currency of the Company's financial statements. The effective tax rate in the Company's financial statements for the years prior to 2003 was, therefore, influenced mainly by the following: (a) the split of taxable income between the various tax jurisdictions; (b) the availability of tax loss carryforwards and the extent to which valuation allowance has been recorded against deferred tax assets; (c) the difference between the change in the exchange rate of the Dollar to New Israeli Shekels (NIS) and the change in the Israeli CPI; and (d) the portion of the Company's income which is entitled to tax benefits due to those of its production facilities which are Approved Enterprises. The combination of these factors produced an effective tax rate of 15.2%, 8.7% and 11.9% (net of special charges) for 2002, 2001 and 2000, respectively.

Beginning January 1, 2003, the Company has elected to exercise the option under Israeli tax laws to calculate its taxable income in Dollars so as to reduce any potential exposure based on the differential between the change in the exchange rate of the Dollar to the NIS and the change in the Israeli CPI. The Company is bound by this election for a period of at least three years. Accordingly, during this period, the Company's effective tax rate will be influenced mainly by the factors described above other than the difference in changes in the exchange rate as compared to changes in the Israeli CPI.

See Item 4.B Business Overview Additional Considerations Relating to the Company's Operations in Israel; and Note 10 to the Consolidated Financial Statements listed in Item 18.

*(g) Impact of Inflation and Currency Fluctuations*

The Dollar cost of the Company's operations in Israel is influenced by the differential between the rate of inflation in Israel and any change in the value of the NIS in relation to the Dollar. The Company's Dollar costs will increase if this gap widens and the devaluation rate fails to keep pace with the rate of inflation in Israel, and, conversely, the Company may benefit if the rate at which Israeli currency devalues against the Dollar



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exceeds the rate of inflation in Israel. In the years ended December 31, 2002, 2001, 2000, 1999 and 1998, the annual inflation rate in Israel as adjusted for the devaluation of the Israeli currency in relation to the Dollar was (0.8)%, (7.8)%, 2.7%, 1.5% and (9.0)%, respectively. The closing representative exchange rate of the Dollar at the end of each such period, as reported by the Bank of Israel, was NIS 4.737, NIS 4.416, NIS 4.041, NIS 4.153 and NIS 4.160, respectively. As a result, the Company experienced increases in the Dollar costs of operations in Israel in 1999 and 2000, and decreases in 1998, 2001 and 2002. The changes in the Dollar cost of the Company's operations in Israel relate primarily to the cost of salaries in Israel, which are paid in, and constitute a substantial portion of, the Company's expenses in NIS. These NIS related expenses constituted approximately 25%, 24% and 26% of the total expenses of the Company for 2002, 2001 and 2000, respectively. There can be no assurance that the Company will not be materially adversely affected if inflation in Israel exceeds the devaluation of the NIS against the Dollar or if the timing of such devaluation lags behind increases in inflation in Israel.

In addition, the Company receives most of its European revenues in Euros and its Japanese revenues in Japanese Yen, and expenses in Euros and Japanese Yen are generally less than revenues in these currencies. The management of balances in Euros and Japanese Yen is conducted mainly through hedging agreements in an effort to reduce the effects of fluctuations in the exchange rate. See Item 11 Quantitative and Qualitative Disclosures about Market Risk. The Company's cash reserves are held almost entirely in Dollars.

The representative exchange rate for converting NIS into Dollars, as published by the Bank of Israel on April 25, 2003, was NIS 4.583 = \$1.00.

**(h) Results of Operations**

The following table sets forth certain financial data as a percentage of revenues for the periods indicated.

	Year Ended		
	December 31,		
	2002	2001	2000
	%	%	%
Revenues	100.0	100.0	100.0
Cost of revenues:			
Cost	60.2	53.8	49.0
Write-down of inventories		2.3	
Settlement with the Government of Israel in respect of research and development grants received		4.7	
Total cost of revenues	60.2	60.8	49.0
Gross profit	39.8	39.2	51.0
Operating expenses			
Research and development costs:			
Expenses incurred	20.5	16.6	11.3
Less government participations	1.0		0.0
Net research and development costs	19.5	16.6	11.3

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Selling, general and administrative expenses	23.2	19.4	16.3
Amortization of goodwill and other intangible assets	1.1	2.4	1.2
Restructuring costs	5.0	2.0	
	<u>          </u>	<u>          </u>	<u>          </u>
Total operating expenses	48.8	40.4	28.8
Operating income (loss)	(9.0)	(1.2)	22.2
	<u>          </u>	<u>          </u>	<u>          </u>
Financial income net	1.3	1.6	2.1
Income (loss) before taxes on income	(7.7)	0.4	24.3
	<u>          </u>	<u>          </u>	<u>          </u>
Taxes on income	(0.5)	(0.3)	2.9
Income (loss) from operations of the Company and its subsidiaries and joint venture	(7.2)	0.7	21.4
	<u>          </u>	<u>          </u>	<u>          </u>
Share in losses of an associated company	(0.1)		
Minority share in profits			(0.2)
	<u>          </u>	<u>          </u>	<u>          </u>
Net income (loss)	(7.3)	0.7	21.2
	<u>          </u>	<u>          </u>	<u>          </u>

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**Table of Contents***(i) Year Ended December 31, 2002 Compared To Year Ended December 31, 2001*

The Company's financial results for 2002 reflect the effects of a very challenging year, in which the prevailing worldwide economic weakness continued to impact the Company's financial results and the overall difficulty in meeting its goals. During the year the Company experienced a continuation of the trend, which had commenced in the second quarter of 2001, towards a significantly lower level of demand for its products. This reflected, in part, widespread capital expenditure reductions throughout the electronics industry as inventories of electronic products, especially telecommunication devices, remained elevated. Consequently, during the year the Company recorded sharply reduced product revenues, particularly from sales of its AOI systems for bare PCBs, lower gross margins (prior to adjustment in 2001 for the write-down of inventories and the settlement with the Government of Israel pursuant to the OCS Agreement) and an overall operating loss. Towards the end of 2002, the Company witnessed some degree of stabilization in the demand for its bare and assembled PCB inspection systems, as well as a modest increase in the level of demand for its FPD inspection systems.

On two occasions during 2002 the Company implemented wide-ranging cost containment measures designed to align its expenditures with the lower demand for its products and to expedite a return to profitability. During the first quarter of 2002 these measures included a reduction in the Company's worldwide workforce and a Company-wide reduction in employee salaries, as well as a further reduction of 10% in management salaries. During the fourth quarter of the year they comprised operational rationalizations, including the closing of certain regional offices in both North America and Europe, and further employee dismissals, resulting in an overall headcount of approximately 1,400 at the end of December 2002 compared to approximately 1,650 a year earlier. During the year, the Company recorded special charges totaling \$10.7 million (\$10.5 million net of taxes), comprised primarily of restructuring costs related to these employee dismissals and operational rationalizations.

Revenues in 2002 totaled \$216.4 million compared with \$301.9 million in 2001. This decrease of 28% was principally attributable to the continuing worldwide economic downturn and reduced overall demand for electronic equipment, and consequently for manufacturing components such as PCBs. Revenues from service activities declined to \$62.1 million from the \$75.6 million recorded in 2001, corresponding partly to the lower warranty revenues generated in circumstances of reduced product sales, and partly to the diminishing number of bare PCB manufacturing facilities, particularly in North America and Europe, resulting from overcapacity.

Revenues from the sale and service of PCB-related equipment decreased to \$149.3 million from the \$226.5 million recorded in 2001. Of these revenues, approximately \$129.4 million, representing approximately 60% of the Company's revenues, was attributable to sales and service of systems for bare PCBs and approximately \$19.9 million, representing approximately 9% of the Company's revenues, was attributable to sales and service of AOI systems for assembled PCBs. In 2001, approximately \$202.0 million of revenues, representing approximately 67% of the Company's revenues, was attributable to sales and service of systems for bare PCBs and approximately \$24.5 million of revenues, representing approximately 8% of the Company's revenues, was attributable to sales and service of AOI systems for assembled PCBs.

During 2002, the Company's direct imaging manufacturing equipment continued to gain broader acceptance, in particular with manufacturers of high density, fine line bare PCBs.

The decrease in revenues from sales of AOI systems for assembled PCBs reflects the difficulties being experienced in the electronics manufacturing services (EMS) industry, which is also characterized by a widespread hesitancy on the part of contract manufacturers in making additional capital investments under the current difficult economic conditions. Although the overall level of penetration of AOI within the assembled PCB manufacturing industry remains low, the Company believes that this area is still maturing and will, in the future, be characterized by more widespread recognition on the part of assembly houses of the importance of AOI in their operations.



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Revenues from the sale and service of FPD equipment decreased to \$58.2 million from \$69.4 million in 2001. For most of the year capital expenditures by FPD manufacturers remained at relatively low levels. The Company believes that this was due to an excess in manufacturing capacity for amorphous silicon-based displays as a result of the extensive capital investments by manufacturers during 2000 and 2001. Investments in capital equipment during 2002 were primarily in AOI for low temperature polysilicon based displays. Towards the end of 2002, certain of the Company's customers began placing orders for AOI equipment to be installed in new FPD fabrication plants designated for the production of fifth generation glass sizes, which are primarily for use in television, notebook and desktop monitor applications. This accounted for the increase in revenues for the fourth, as compared with the third, quarter of 2002.

Revenues from the Company's automatic check reading products totaled approximately \$8.8 million in 2002, compared with approximately \$6.0 million in 2001, an increase of approximately 48%. The Company believes that this reflects a growing awareness on the part of banks and other check processing organizations of the potential benefits to them of automatic check reading solutions of the type provided by the Company's data conversion software.

Geographically, the Company experienced relative stability in the Far East, notably Taiwan, China and Korea, but a significant reduction in revenues from North America, Europe and Japan. For additional information, see Geographical Analysis; Worldwide Economic Situation; Cost of Revenues.

Gross profit for 2002 was \$86.1 million, or 39.8% of revenues, as compared to \$118.4 million, or 39.2% of revenues, in 2001, and \$139.6 million, or 46.2% of revenues excluding special charges of \$7.0 million recorded for the write-down of inventory and \$14.2 million arising out of the OCS Agreement (see Item 5.C(a) Research and Development, Patents and Licenses, etc. Research and Development Policy). The decline in gross profit margin was attributable primarily to pricing pressures exerted by customers, the sale of a larger proportion of low-end PCB inspection equipment in 2002 as compared to the previous year, a decrease in capacity utilization resulting from lower unit volume and a higher proportion of service (as distinct from equipment) revenues as a percentage of total revenues in 2002 than in 2001.

The reduction in gross research and development expenditures, from \$50.0 million in 2001 to \$44.4 million in 2002 (corresponding to a reduction of 11.3% including, and 9.0% excluding, the \$1.2 million for Jenoptik's contribution to research and development projects) primarily reflected the curtailment of certain of the Company's research and development activities during the economic downturn. The Company continued to make substantial investments in new products and technologies to meet the current and projected requirements of its customers and to maintain a competitive advantage in the products and services it provides. During 2002, the Company received \$2.2 million in Israeli Government participation in its research and development expenditures under the new program for which it became eligible as a result of the OCS Agreement.

Selling, general and administrative expenses totaled \$50.2 million in 2002 as compared to \$58.6 million in 2001. This 14.4% decrease reflects, in part, the reduced worldwide sales and marketing activity resulting from overall lower business volume and, consequently, lower sales commissions and other discretionary payments. Nevertheless, the Company has continued to invest in sales and marketing activities in China in view of the continuing migration to the Far East region, and in particular to China, of high-volume PCB manufacturing operations from other parts of the world.

The amortization of goodwill and other intangible assets during 2002 totaled \$2.5 million as compared to \$7.3 million in 2001. The decrease was attributable to the application of FAS 142 to the Company's financial results for 2002, under which goodwill is no longer amortized. Prior to 2002, goodwill was amortized over periods of five to ten years. See Critical Accounting Policies.

Net financial income totaled \$2.9 million in 2002 as compared to \$4.7 million in 2001. The decrease in interest income from \$7.6 million to \$3.8 million was due to the continuing reduction in applicable interest rates.

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The Company also recorded an exchange rate gain of \$0.6 million during the year, compared with an exchange rate loss of \$2.0 million in 2001. The Company incurred \$0.6 million in interest expenses in 2002 with respect to the liability to the Government of Israel arising from the OCS Agreement.

Taxes on income in 2002 reflected a credit of \$1.1 million, compared to a credit of \$1.0 million in 2001. The tax credit of \$0.9 million, before the effect of the restructuring charges, relates to the future benefit arising from the tax losses incurred in 2002. This compares to taxes on income of \$2.6 million in 2001, before the effect of the special charges in 2001 (recorded for restructuring charges, the write-down of inventory, Jenoptik's contribution to research and development projects and the OCS Agreement). The tax benefits recorded as a result of the restructuring charges in 2002 were \$0.2 million, as compared to tax benefits resulting from the 2001 special charges of \$2.6 million. The Company's effective tax rates with respect to 2002 and 2001, before the effect of these charges, were 15.2% and 8.7%, respectively. Generally, the Company's effective tax rate varies largely as a function of benefits received from the State of Israel, particularly those relating to Approved Enterprises. See Effective Corporate Tax Rate.

The share in losses of an associated company of \$0.2 million reflects the Company's share in the losses of Core Flow Ltd., a private Israeli company in which the Company has an equity interest.

Net loss for the full year ended December 31, 2002 was \$15.8 million, or \$0.49 per share (diluted), compared with net income for the full year ended December 31, 2001 of \$2.0 million, or \$0.06 per share (diluted). Excluding restructuring charges of \$10.5 million, net of taxes, for the full year ended December 31, 2002, net loss for the year was \$5.3 million, or \$0.17 per share (diluted), compared with net income, excluding special charges (recorded for restructuring charges, the write-down of inventory, Jenoptik's contribution to research and development projects and the OCS Agreement) of \$25.0 million, net of taxes, of \$27.0 million, or \$0.82 per share (diluted), in 2001.

***(j) Year Ended December 31, 2001 Compared To Year Ended December 31, 2000***

The Company's financial results for 2001 reflected a very difficult year, characterized predominantly by the ongoing, severe slowdown throughout the electronics industry worldwide. This was evidenced by the sharp reduction in revenues and gross margins as well as in an operating loss for the year. The materially lower demand for the Company's PCB-AOI equipment was offset, in part, as a result of the successful realization over the previous years of Orbotech's policy of diversification into additional AOI and manufacturing applications. This enabled the Company to maintain its solid financial position in a challenging year despite the prevailing harsh economic environment. During 2001, the Company implemented a number of expense containment measures designed to align its cost structure to the lower level of demand for its products. These included: a reduction in the Company's worldwide workforce, from a peak of approximately 1,900 employees in August 2001 to approximately 1,650 employees at the end of December 2001; the freezing of management salaries at their 2000 levels in March 2001 followed by a 10% reduction in management salaries in August 2001; the rationalization of certain manufacturing and operational activities; and generally lower discretionary spending. The Company continued during the year to monitor its inventory levels closely.

During 2001, the Company recorded special charges totaling \$28.5 million (\$25.0 million net of taxes), comprised of \$6.1 million (\$5.5 million net of taxes) in restructuring costs related to employee dismissals and operational rationalizations, \$7.0 million (\$6.2 million net of taxes) related to the write-down of inventories, \$1.2 million (\$1.1 million net of taxes) in respect of research and development co-operation between the Company and Jenoptik and \$14.2 million (\$12.2 million net of taxes) arising out of the OCS Agreement.

Revenues in 2001 totaled \$301.9 million compared with \$372.3 million in 2000. This decrease of 19.0% resulted principally from the worldwide economic downturn and specifically its effect of reducing overall demand for electronic equipment, including manufacturing components such

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as PCBs. The Company's revenues from service activities grew at a slower rate than in the previous year due to underutilization of capacity in the installed base of the Company's products and declining sales of new systems.



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Revenues from the sale and service of PCB-related equipment decreased to \$226.5 million from \$302.4 million in 2000. Of these revenues, approximately \$202.0 million, representing approximately 67% of the Company's revenues, was attributable to sales and service of systems for bare PCBs, and approximately \$24.5 million, representing approximately 8% of the Company's revenues, was attributable to sales and service of AOI systems for assembled PCBs. In 2000, approximately \$279.0 million of revenues, representing approximately 66% of the Company's revenues, was attributable to sales and service of systems for bare PCBs, and approximately \$23.4 million of revenues, representing approximately 6% of the Company's revenues, was attributable to sales and service of AOI systems for assembled PCBs.

The decrease in revenues arising from sales of AOI systems for bare PCBs reflected the reduction in manufacturing activity and capacity underutilization experienced by many of the Company's large PCB customers, who reduced capital expenditures due both to a decline in their own businesses and profitability and to overall uncertainty as to the projected length and severity of the global economic downturn. The relatively small increase in revenues arising from sales of AOI systems for assembled PCBs reflects, on the one hand, the growing recognition by manufacturers of the importance of AOI in the assembled board manufacturing process coupled with the low overall level of penetration of AOI within this industry but, on the other, the widespread hesitancy on the part of contract manufacturers in making additional capital investments under prevailing economic conditions. By contrast, during 2001 the Company's direct imaging manufacturing equipment continued to gain broader acceptance throughout the PCB industry, demonstrating the significant benefits which, the Company believes, this enabling technology offers to the PCB manufacturing process.

Revenues from the sale and service of FPD equipment increased to \$69.4 million from \$65.1 million in 2000, reflecting a limited increase in capital expenditures, mainly by FPD manufacturers investing in new technologies such as Low Temperature Polysilicon and so-called fifth generation glass sizes. These additional capital investments served, in part, to offset reduced demand for certain of the Company's other FPD-AOI products arising from the excess capacity created in the FPD industry as a result of the extensive investments made by manufacturers during 2000, especially in FPDs for desktop monitor applications.

Revenues from the Company's automatic check reading products totaled approximately \$6.0 million in 2001, compared with approximately \$4.8 million in 2000, an increase of approximately 25%.

Geographically, the Company experienced relative stability in Europe and Japan, but a significant reduction in revenues from North America and Taiwan. For additional information see Geographical Analysis; Worldwide Economic Situation; Cost of Revenues.

Gross profit for 2001 was \$118.4 million, or 39.2% of revenues. Excluding a special charge of \$7.0 million recorded for the write-down of inventory and a one-time charge of \$14.2 million arising out of the OCS Agreement (see Item 5.C(a) Research and Development, Patents and Licenses, etc. Research and Development Policy), gross profit for 2001 was \$139.6 million, or 46.2% of revenues, as compared to \$190.1 million, or 51.1% of revenues, in 2000. The decline in gross profit margin was primarily attributable to the sale of a larger percentage of low-end PCB inspection equipment in 2001 as compared to the previous year, a decrease in capacity utilization resulting from lower unit volume and a higher proportion of service (as distinct from equipment) revenues as a percentage of total revenues in 2001 as compared with 2000. The charge recorded for excess inventory was in respect of raw materials related to the Company's high-end and mainstream PCB-AOI products, which were those principally affected by the overall slowdown in business.

The increase in net research and development expenditures from \$42.1 million in 2000 to \$50.0 million in 2001 (corresponding to an increase of 18.5% including, and 15.9% excluding, the \$1.2 million for Jenoptik's contribution to research and development projects) primarily reflected the Company's increased research and development efforts directed toward expanding into and developing new technologies, developing products which address new applications and enhancements to existing products. During 2001, the Company received no Israeli Government participation

in its research and development expenditures.

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Selling, general and administrative expenses totaled \$58.6 million in 2001 as compared to \$60.7 million in 2000. This 3.5% decrease reflects, in part, reduced worldwide sales and marketing activity due to the downturn in the global electronics industry, which in turn resulted in lower sales commissions. Nevertheless, the Company has continued to expand its sales and marketing activities in China in view of the continuing migration to the Far East region, principally China, of high-volume PCB manufacturing operations from other parts of the world.

The amortization of goodwill and other intangible assets during 2001 totaled \$7.3 million as compared to \$4.6 million in 2000. The increase was attributable to the exercise of the Schuh option and the SIS Acquisition in 2001.

Restructuring costs of \$6.1 million were recorded in 2001 in connection with the Company's review of its operations in light of the effects on the Company of the economic downturn. The measures taken included reducing the Company's worldwide workforce from approximately 1,900 in August 2001 to approximately 1,650 in December 2001. In addition, as part of its efforts to rationalize certain of its operations so as to align production capacity with current and anticipated reduced levels of demand, the Company consolidated its Japanese operations. The Company also recorded a one-time charge of \$14.2 million arising out of the OCS Agreement.

Net financial income totaled \$4.7 million in 2001 as compared to \$8.0 million in 2000. The decrease in interest income from \$9.0 million to \$7.6 million was due to the continuing reduction in applicable interest rates, which declined by several hundred basis points during 2001. The Company also recorded exchange rate losses totaling approximately \$2.0 million during the year, compared with an exchange rate gain of \$0.4 million in 2000.

Taxes on income in 2001 reflected a credit of \$1.0 million, as compared to a tax expense of \$10.8 million in 2000. Taxes on income in 2001, before the effect of the abovementioned special charges (recorded for restructuring charges, the write-down of inventory, Jenoptik's contribution to research and development projects and the OCS Agreement) were \$2.6 million. The tax benefits recorded as a result of these special charges were \$3.6 million. The Company's effective tax rates with respect to 2001 and 2000, before the effect of these special charges, were 8.7% and 11.9%, respectively. Generally, the Company's effective tax rate varies largely as a function of benefits received from the State of Israel relating to Approved Enterprises. See Effective Corporate Tax Rate.

Net income for 2001 was \$2.0 million, or \$0.06 per share (diluted), compared with net income of \$79.1 million, or \$2.40 per share (diluted), for 2000. Excluding the special charges (recorded for restructuring charges, the write-down of inventory, Jenoptik's contribution to research and development projects and the OCS Agreement) totaling \$25.0 million, net of taxes, net income for 2001 was \$27.0 million, or \$0.82 per share (diluted), compared with net income of \$79.1 million, or \$2.40 per share (diluted), for 2000. Including special charges, net income for 2001 was \$2.0 million, or \$0.06 per share (diluted).

***5.B Liquidity and Capital Resources***

***(a) General***

The Company's financial position remained strong during 2002 despite the decrease in cash, cash equivalents and marketable investments to \$150.1 million at the end of 2002 from \$165.9 million a year earlier. This decrease occurred primarily as a result of cash used in investing

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activities, including capital expenditures of \$4.6 million and investments, both directly by the Company and the Fund, totaling \$7.5 million, which was partially offset by positive cash flow generated from financing activities, including the exercise of stock options by employees which generated approximately \$1.8 million.

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Although inventories declined from \$80.1 million as at December 31, 2001 to \$68.4 million as at December 31, 2002 due to the significantly reduced level of operations in 2002 as compared to 2001, inventories as a percentage of revenues rose to 31.6% as at December 31, 2002, as compared to 26.5% as at December 31, 2001. The Company believes that its very close monitoring of raw materials and work-in-process inventory levels accounted for substantially all of the reduction. The overall increase of \$3.1 million in net trade accounts receivable resulted in a corresponding increase in the period trade receivables were outstanding (calculated by dividing trade receivables at year end into latest quarter revenues), from 129 days on December 31, 2001 to 138 days on December 31, 2002. This reflects, in part, the Company's granting of additional credit and extended payment terms to certain of its customers in view of the difficult economic environment in which they have been operating. The Company did not realize any significant bad debts during 2002. The decrease in accounts payable and accruals of \$8.0 million as compared to 2001 reflected the reduction in the overall business of the Company during 2002, offset, in part, by restructuring costs not yet paid.

Capital expenditures during 2002 totaled \$4.6 million compared with \$9.3 million in 2001, as the Company expended significantly reduced amounts in equipping its manufacturing facilities and in upgrading its management information systems, in light of the ongoing economic slowdown and as part of its program of cost containment measures.

The following table summarizes the Company's contractual obligations as at December 31, 2002:

	Payment due in					After 2007
	Total	2003	2004	2005	2006	
(Dollars in millions)						
Contractual Obligations:						
Long-term debt	14.9	3.0	6.0	5.9		
Operating leases	26.5	5.4	8.3	6.3		6.5
Purchase obligations	17.3	17.3				
Commitments for equity investments	4.3	4.3				
<b>Total</b>	<b>63.0</b>	<b>30.0</b>	<b>14.3</b>	<b>12.2</b>	<b>6.5</b>	

Long-term debt consists of amounts due to the Government of Israel pursuant to the OCS Agreement, which is described in Item 5.C(a) Research and Development, Patents and Licenses, etc. Research and Development Policy. Operating lease obligations represent commitments under various commercial facility leases. Purchase obligations represent outstanding purchase commitments for inventory components ordered in the normal course of business. The Company's commitments for equity investments are investments in companies which have either technologies or products that may complement the Company's long-term business strategy to which the Fund and the Company had committed as at December 31, 2002. The Company is not a party to any capital leases.

The Company had unutilized credit lines totaling \$50.2 million at December 31, 2002.

The Company is not aware of any material commitments for capital expenditures in the future and believes that its currently available cash and cash equivalents and funds generated from operations will be sufficient to meet its working capital requirements for the next twelve months.

The Company uses financial instruments and derivatives in order to limit its exposure to risks arising from changes in exchange rates. The use of such instruments does not expose the Company to additional exchange rate risks since the derivatives are held against an asset (for example, excess assets in Euros). See Item 11 Quantitative and Qualitative Disclosures About Market Risk. The Company's policy in utilizing these financial instruments is to protect the Dollar value of its cash and cash equivalent assets rather than to serve as a source of income. For information as to monetary balances in non-Dollar currencies see Note 12 to the Consolidated Financial Statements listed in Item 18.

**Table of Contents****(b) Off-Balance Sheet Arrangements**

The Company does not use off-balance sheet arrangements or transactions with unconsolidated, limited-purpose entities to provide liquidity, financing or credit support or to engage in leasing, hedging or research and development activities or which would expose the Company to liability that is not reflected on the face of its financial statements. The Company is not a party to any off-balance sheet arrangements which would be required to be disclosed under Item 5.E of Form 20-F were that Item currently applicable to the Company.

**5.C Research and Development, Patents and Licenses, etc.****(a) Research and Development Policy**

The Company places considerable emphasis on research and development projects designed to upgrade its existing product lines and to develop new industrial and service applications of its technologies. As of December 31, 2002, 338 employees were engaged primarily in research and development for the Company.

The following table shows the total research and development expenditures of the Company and participation in such expenditures by the Government of Israel for the periods indicated:

	Year ended December 31,		
	2002	2001	2000
	(in thousands)		
Internally-funded research and development expenditures	\$42,193	\$50,047	\$42,097
Governmental participations	2,191	0	140
<b>Total outlay for research and development</b>	<b>\$44,384</b> *	<b>\$50,047</b>	<b>\$42,237</b>

\* Net research and development costs for the year ended December 31, 2001 included \$1.2 million in consideration for co-operation on joint research and development projects between the Company and Jenoptik. This was effected by the issuance of 67,500 Ordinary Shares to an affiliate of Jenoptik.

Prior to 2001, the Company took advantage of certain Israeli Government programs which provided for participation in research and development expenses. The extent and payment terms for the Company's overall royalty obligation to the Government of Israel in respect of products in the research and development of which the Government has previously participated were resolved during 2001 by the OCS Agreement pursuant to which the Company agreed to pay to the Government of Israel \$14.2 million in settlement of all royalty obligations (other than those of Orbograph) arising from sales after June 30, 2001 with respect to previous OCS grants to the Company. The Company decided to make this payment in annual installments over five years commencing in 2003. During the years ended December 31, 2002, 2001 and 2000, the Company's royalty expenses to the Israeli Government with respect to such participations were approximately \$0.3 million (all of

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which related to Orbograph), \$2.8 million and \$7.1 million, respectively. See Note 8 to the Consolidated Financial Statements listed in Item 18. During 1999, following the Company's determination that the conditions then imposed upon Israeli Government participation in the Company's research and development (including the royalty repayment provisions) were no more attractive than other financing opportunities, the Company decided to reduce such participation. However, the Company now participates in a new, royalty free OCS funded program for the development of generic technologies, for which it became eligible as a result of the OCS Agreement and pursuant to which it received approximately \$2.2 million during 2002.

Israeli Government consent is required to manufacture products developed with such participations outside of Israel and to transfer to third parties know-how developed through projects in which the Government participates. Such restrictions do not apply to the export from Israel of the Company's products developed with such know-how.



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***(b) Intellectual Property***

To safeguard its proprietary product design and technology, the Company relies, in part, on patent, trade secret, trademark and copyright law, as well as technical safeguards. Proprietary software is generally protected under copyright law. Additionally, the Company relies upon trade secrets and regularly enters into non-disclosure agreements with its employees, subcontractors and potential business associates. As of March 31, 2003, the Company held 109 patents covering 56 different inventions and had 168 pending patent applications.

Notwithstanding the above, there can be no assurance that any patent owned or licensed by the Company will not be invalidated, designed around, challenged or licensed to others, that any of the Company's pending or future patent applications will be issued with the scope of the claims sought by the Company, if at all, or that non-disclosure agreements will not be breached. In addition, patent coverage may not be extended to all countries, and effective copyright and trade secret protection may be unavailable or limited in certain countries. There can also be no assurance that the steps taken by the Company will prevent misappropriation of its technology. It is also possible that technology developed by the Company may be infringing on patents or other rights held by others.

The Company has, in a limited number of cases, agreed to indemnify certain of its customers against intellectual property claims arising from the purchase and use of the Company's products. Some customers of the Company that use certain of its products have received notices of infringement alleging that methods carried out on equipment supplied by the Company and used in the inspection of PCBs in the course of manufacture infringe patents issued to others relating, among other things, to machine vision i.e., computer image analysis. Certain of these customers have notified the Company that they may seek indemnification from the Company for damages and expenses which may result from this matter; however the Company believes that the risk of its having to make payment in this regard is remote. To date, no claims have been filed against the Company in this regard.

Although the Company continues actively to pursue the protection of its intellectual property in the belief that its patents have significant value, it also believes that rapid technological improvement and factors such as the knowledge and experience of the Company's management personnel and employees and their continued ability to define, develop, enhance and market new products and services afford additional protection which may, in some instances, exceed patent protection.

Pursuant to a Spin-Off and License Agreement dated as of August 17, 1992 (the **Spin-Off Agreement**), entered into in connection with the Merger, Orbot Instruments Ltd. (**Instruments**), formerly a subsidiary of Orbot which was subsequently acquired by Applied Materials, Inc. (**Applied**), and merged into an Israeli subsidiary of Applied, was granted the perpetual worldwide right and license to continue using, free of royalties, any and all know-how and intellectual property which was in the possession of Orbot prior to July 1, 1992 (including, inter alia, any and all intellectual property protected by patents, copyrights or other registered or non-registered rights), for the purpose of research and development, manufacturing, marketing, sale, lease or service of products for use in the manufacture or inspection of semiconductor devices. Instruments was engaged in the business of designing, developing, manufacturing, marketing and servicing AOI systems for use at various stages in the manufacture of semiconductors and produced automated optical systems for the inspection of wafers and for the inspection of masks and reticles, master products used in the manufacture of semiconductors. Similarly, Instruments granted the Company (as successor to Orbot) the perpetual worldwide right and license to continue using, free of royalties, any and all know-how and intellectual property which was in Instruments' possession prior to July 1, 1992, for the purpose of research and development, manufacturing, marketing, sale, lease or service of products of the Company.

The Spin-Off Agreement contained a non-competition agreement (the **Non-Competition Agreement**) pursuant to which Instruments agreed not to engage, directly or indirectly, at any time prior to October 27, 2002, in any research and development, design, manufacture, production,

marketing, sale, lease or service of: (i)

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products for use in the manufacture or inspection of PCBs; (ii) CAD/CAM products for use in the manufacture of PCBs or MCMs; (iii) FPD devices or products for use in the manufacture or inspection of FPD devices; (iv) products for use in the manufacture or inspection of MCMs, including products relating to thin film and multi-layered ceramics; or (v) character recognition products. Pursuant to the Non-Competition Agreement, the Company agreed not to engage, directly or indirectly, at any time prior to October 27, 2002, in any research and development, design, manufacture, production, marketing, sale, lease or service of products for use in the manufacture or inspection of semiconductor devices. The Non-Competition Agreement has expired.

### ***5.D Trend Information***

The global electronics industry, which the Company serves, is currently experiencing a severe and prolonged downturn, which commenced in the latter part of 2000 and has extended into 2003. During this downturn, and ultimately as the result of depressed levels of end-user demand for electronic devices on the part of personal and business consumers, electronics component manufacturers have witnessed a general decline in their own businesses and profitability, characterized by capacity underutilization and an excess of inventories. Consequently, they have reduced significantly their rate of capital expenditures, including those associated with the purchase of capital equipment such as the systems supplied by the Company. This was reflected in the Company's sharply reduced product revenues over the last three quarters of 2001 and for 2002 as a whole.

With overall economic conditions remaining harsh, the Company continues to provide pricing incentives to customers in respect of certain of its products, to manage its inventory levels very closely and to align its cost structures in accordance with the prevailing economic and business conditions.

The Company's ability to foresee future trends in the flow of orders for its systems (colloquially referred to as its "visibility") remains highly restricted, and it is not able to predict the length of time during which economic conditions will remain depressed or the extent to which such continued conditions may affect its income, profitability or capital resources during 2003.

Because the Company is primarily a producer of production support solutions for application in the supply chain of the electronics industry, it anticipates that when the overall business and economic situation does improve, there may still be a delay before the effects of such improvement begin to be felt in some parts of the Company's business. However, the Company remains optimistic that in the long-term the demand for its products will recover and that its continuing emphasis on research and development and its strong financial condition will provide a sound base for future growth.

**Table of Contents****Item 6. Directors, Senior Management and Employees****6.A Directors and Senior Management**

As at March 31, 2003, the Directors and Executive Officers of the Company were as follows:

<u>Name</u>	<u>Date of Birth</u>	<u>Director Since</u>	<u>Position with the Company</u>
Dr. Shlomo Barak(1),(2)	November 19, 1938	1981	Chairman of the Board of Directors
Yochai Richter(3),(4)	September 17, 1942	1992	Director and Chief Executive Officer
Dr. Michael Anghel(1),(5),(6)	January 13, 1939	1986(7)	Director and Chairman of the Audit and Remuneration Committees of the Board of Directors
Yehudit Bronicki(8)	December 29, 1941	2000(9)	Director
Dan Falk(3),(5)	January 12, 1945	1997	Director
Uzia Galil(2)	April 27, 1925	1981	Director
Gideon Lahav(1),(5),(6)	December 9, 1929	1998	Director
Dr. Jacob Richter(4),(8)	December 24, 1945	1997(10)	Director
Dr. Shimon Ullman(2)	January 28, 1948	1992	Director and Chief Scientist
Raanan Cohen	April 1, 1955		Co-President Business and Strategy
Eyal Harel	May 2, 1957		Co-President Products and Technology
Arie Weisberg	October 19, 1950		Co-President Global Resources
Amichai Steinberg	May 25, 1962		Corporate Vice President for

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		Finance and Chief Financial Officer
Adrian Auman	December 16, 1954	Corporate Vice President for Investor Relations and Director of Finance
Michael Havin	December 14, 1958	Corporate Secretary

- (1) Member of the Remuneration Committee of the Board of Directors (the **Remuneration Committee** ).
- (2) Class II Director. See Item 6.C(a).
- (3) Class I Director. See Item 6.C(a).
- (4) Yochai Richter and Jacob Richter are brothers.
- (5) Member of the Audit Committee of the Board of Directors (the **Audit Committee** ).
- (6) External Director.
- (7) Dr. Anghel resigned as a director of the Company as of October 27, 1992, and was re-appointed as a director of the Company on November 19, 1992.

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(8) Class III Director. See Item 6.C(a).

(9) Mrs. Bronicki served as a director of the Company between August 15, 1993 and February 27, 1994.

(10) Dr. Richter served as a director of the Company between October 27, 1992 and August 15, 1993.

Dr. Shlomo Barak has been the Chairman of the Board of Directors since August 1996 and served as Co-Chairman of the Board of Directors from October 1992 to November 1994. Dr. Barak is an industrial promoter and was a founder, as well as the President, Chief Executive Officer and a director of the Company, from its formation in 1981 until October 1992. Prior to the Company's formation, Dr. Barak was Vice President for Research and Development and Engineering for four years at El-Op Ltd., an Israeli manufacturer of electro-optical systems for military and commercial applications, where he was employed for ten years. Dr. Barak currently serves as chairman of the board of directors of B.G. Negev Technologies & Applications Ltd., an Israeli company established to facilitate the commercial application of new technologies developed at Ben-Gurion University of the Negev in Israel ( **Ben-Gurion University** ). Dr. Barak holds a bachelor's degree in mathematics and physics and a master's degree and a doctorate in physics, all from the Hebrew University of Jerusalem (the **Hebrew University** ).

Yochai Richter has been the Chief Executive Officer since November 2002 and was the President and Chief Executive Officer from November 1994 to November 2002. He has been a member of the Board of Directors since October 1992 and was a joint Managing Director and Chief Executive Officer from October 1992 to November 1994. Mr. Richter was a member of the board of directors and a managing director of Orbot from its organization in 1983 until the acquisition by the Company, in 1992, of all of the outstanding shares of Orbot. He received his degree in mathematics from the Technion-Israel Institute of Technology (the **Technion** ) in Haifa in 1972.

Dr. Michael Anghel is the founder and managing director of CAP Ventures Ltd., an Israeli company operating and investing in the area of Israeli advanced technology ventures. He is also the founder and chief executive officer of PassOver Inc., a telecommunications venture combining cellular and cable infrastructures. From 1977 to May 1999, he served as director and senior manager of Discount Investment Corporation Ltd. ( **DIC** ), an Israeli corporation, and as managing director of DIC Communication and Technology Ltd., a wholly owned subsidiary of DIC. In addition, during this period he served on the boards of directors of a number of Israeli Nasdaq listed companies connected with DIC and PEC Israel Economic Corporation, a Maine corporation, including Elron Electronic Industries Ltd. ( **Elron** ), Elscint Ltd., Elbit Medical Imaging Ltd., Nice Systems Ltd. ( **Nice** ) and Gilat Satellite Networks Ltd. Dr. Anghel has been instrumental in founding several major Israeli communications operating companies including the principal Israeli cable television company (Tevel Israel International Communications Ltd.) and the Israeli cellular telephone company Cellcom Israel Ltd., as well as a variety of other advanced technology ventures. Dr. Anghel was formerly a member of the faculty of the Graduate School of Business Administration of Tel Aviv University, with which he is still affiliated. Dr. Anghel received his bachelor's degree in economics from the Hebrew University and his master's degree in business administration and a doctorate in finance and business from Columbia University.

Yehudit Bronicki has, since 1991, been the Managing Director of Ormat Industries Ltd. ( **Ormat** ), an Israeli manufacturer and developer of renewable energy power plants, which she co-founded in 1965. Mrs. Bronicki is a member of the boards of directors of Ormat Technologies, Inc. and its subsidiaries, OPTI Canada Inc. and Bet Shemesh Engines Ltd. She was also a member of the Advisory Board of the Bank of Israel between 1994 and 1999. Mrs. Bronicki received her bachelor's degree in social sciences from the Hebrew University, followed by advanced studies in management, finance and marketing.

Dan Falk serves as the chairman of the board of directors of Atara Technology Ventures Ltd., an Israeli company engaged in investment in advanced technology enterprises. He is also a member of the boards of directors of Nice, Dor Chemicals Ltd., Orad Ltd., Attunity Ltd., Advanced Vision Technology Ltd., Visionix Ltd., Medcon Ltd. and Ramdor Ltd., all of which are Israeli companies, and of Netafim Irrigation Equipment & Drip Systems, which is an Israeli co-operative society. From July 1999 to November 2000, he served as the president and chief

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operating officer of Sapiens International Corporation N.V., a Netherlands Antilles company

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engaged in the development of software solutions for large-scale, cross-platform systems. He was Executive Vice President of Orbotech from August 1995 to July 1999, and between June 1994 and August 1995 served as its Executive Vice President and Chief Financial Officer. Prior thereto he was Vice President and Chief Financial Officer of the Company from October 1992 until June 1994. He was director of finance and chief financial officer of Orbot from 1985 until consummation of the Merger. He received a master's degree in business administration in 1973 from the Hebrew University School of Business and had 15 years experience in finance and banking, including senior positions at Israel Discount Bank Ltd. ( **IDB** ), prior to joining Orbot.

Uzia Galil was the Chairman of the Board of Directors from the Company's formation until October 1992. Mr. Galil currently serves as the president and chief executive officer of Uzia Initiatives and Management Ltd., an Israeli company specializing in the promotion and nurturing of new businesses associated with mobile communication, electronic commerce and medical informatics, which he founded in November 1999. From 1962 until November 1999, Mr. Galil served as the president and chief executive officer of Elron, an Israeli high technology holding company, where he also served as chairman of the board. From January 1981 until leaving Elron, Mr. Galil also served as chairman of the board of directors of Elbit Ltd., an electronic communication affiliate of Elron, and as a member of the boards of directors of Elbit Systems Ltd., a defense electronic affiliate of Elron, and all of the other private companies held in the Elron portfolio. Mr. Galil currently serves as chairman of the board of directors of Zoran Corporation, a Delaware corporation engaged in the provision of digital solutions-on-a-chip for applications in the field of consumer electronics, and as a member of the boards of directors of NetManage, Inc., a Delaware corporation engaged in host access and host integration solutions and Partner Communications Company Ltd., an Israeli cellular telephone company. From 1980 to 1990, Mr. Galil served as Chairman of the International Board of Governors of the Technion. Mr. Galil received a bachelor of science degree from the Technion and a master's degree in electrical engineering from Purdue University. Mr. Galil has also been awarded an honorary doctorate in technical sciences by the Technion in recognition of his contribution to the development of science-based industries in Israel, an honorary doctorate in philosophy by the Weizmann Institute of Science (the **Weizmann Institute** ), an honorary doctorate in engineering by Polytechnic University, New York, and an honorary doctorate from Ben-Gurion University. Mr. Galil is also a recipient of the Israel Prize.

Gideon Lahav serves as a member of the boards of directors of Delta Galil Ltd., Israel Petrochemical Industries Ltd., Tempo Beer Industries Ltd., DIC and Paz Oil Company Ltd. From 1991 to 1997 he served as the chairman of the boards of directors of IDB and its major banking subsidiaries, Israel Discount Bank of New York, Mercantile Discount Bank Ltd. and Discount Mortgage Bank Ltd. From 1986 to 1991 he served as the managing director of IDB and, from 1979 to 1986, as its deputy general manager. From 1974 to 1979 Mr. Lahav held the position of general manager of Barclays Discount Bank Ltd. (subsequently renamed Mercantile Discount Bank Ltd.). Between 1953 and 1974 he served in various capacities with the Government of Israel, including with the Ministry of Finance and the Ministry of Foreign Affairs, and, from 1969 to 1974, as the Director General of the Ministry of Industry and Trade. Mr. Lahav received his bachelor's degree in economics from the Hebrew University in 1953.

Dr. Jacob Richter serves as the chairman of the board of directors and chief technology officer of Medinol Ltd., an Israeli company that designs, manufactures and sells stents, and has been a director of that company since 1993. He was managing director of Marathon Capital Development Fund Ltd., an Israeli venture capital fund, from 1992 to 1994 and was director of marketing of Orbot from January 1992 until consummation of the Merger. Previously, he was director of new product development of Orbot from January 1990 until 1992 and director of product development of Orbot from 1986 until 1990. Prior to joining Orbot he was head of research and development of the Israeli Air Force. He holds a doctorate in brain research from Tel Aviv University and has worked as a post-doctoral and research fellow at the Artificial Intelligence Laboratory of The Massachusetts Institute of Technology ( **MIT** ).

Dr. Shimon Ullman is employed on a part-time basis as the chief scientist for new products development in the process diagnostic and control product business group of Applied. He has been Chief Scientist of the Company since October 1992 and was chief scientist of Orbot from its organization in 1983 until consummation



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of the Merger. Dr. Ullman is currently head of the Applied Mathematics Department of the Weizmann Institute and was previously a full professor at the Artificial Intelligence Laboratory of MIT.

Raanan Cohen has been a Co-President since November 2002. He was Executive Vice President and President of the Printed Circuit Board Division from January 2000 to November 2002, prior to which he had, since September 1997, been the president and chief executive officer of Orbotech, Inc., the Company's wholly-owned subsidiary in the United States. From January 1994 to September 1997 he was the Vice President for the PCB-AOI Product Line and, from 1991 to January 1994, was the PCB product line manager of Orbot and, after consummation of the Merger, of the Company. He joined Orbot in 1984, where he held various programming and product and project management positions until 1991. Prior to joining Orbot he held positions as a programmer at Telrad Networks Ltd. He received a bachelor's degree in computer science from the Hebrew University.

Eyal Harel has been a Co-President since November 2002. He was Executive Vice President for Products and Technology from January 2000 to November 2002, prior to which he had, since November 1997, been Vice President and General Manager of the Printed Circuit Board Division. From September 1994 to November 1997 he was Vice President for the Image Product Line. Previously he was the LCD Product Manager. He joined Orbot in 1988. Mr. Harel received a bachelor's degree in physics and computer science from Bar-Ilan University and a master's degree in computer science from the Weizmann Institute.

Arie Weisberg has been a Co-President since November 2002. He was Executive Vice President for Global Resources from August 2000 to November 2002, prior to which he had, since January 2000, been Corporate Executive Vice President for Global Resources and Chief Financial Officer. From November 1997 to January 2000 he was Corporate Vice President for Finance and Administration and Chief Financial Officer. From August 1995 to November 1997 he was Vice President for Finance and Administration and Chief Financial Officer. From January 1993 to August 1995 he was co-general manager of Orbotech S.A. and from July 1991 to January 1993 he was director of finance and operations of Orbot's subsidiary in Belgium. Prior to joining Orbot he was, from 1988 to 1991, general manager of Sinus Ltd., a manufacturer of internal combustion valves, and from 1984 to 1988 a regional general manager of Solcoor Inc. He received his bachelor's degree in agricultural economics from the Hebrew University.

Amichai Steinberg has been Corporate Vice President for Finance and Chief Financial Officer since August 2000. From January 1997 to July 2000 he served as the Executive Vice President of Orbotech, Inc., and from 1995 to January 1997 he served as that company's Vice President Finance and Operations. Prior to joining Orbotech, Mr. Steinberg was Chief Financial Officer of Instruments. Mr. Steinberg obtained his bachelor's degree in agricultural economics and business administration from the Hebrew University.

Adrian Auman has been Corporate Vice President for Investor Relations and Director of Finance since January 1, 2000, prior to which he had, since July 1997, been Director of Finance. He was financial controller of the Company from October 1992 to July 1997 and was the financial controller of Orbot from 1988 until the Merger. Prior to joining Orbot, he was an audit supervisor at Kesselman & Kesselman ( **Kesselman** ), independent certified public accountants in Israel, from 1986 to 1988 and a tax manager at Goldstein, Golub, Kessler & Co., certified public accountants, from 1979 to 1985. He is a certified public accountant both in Israel and the United States and has a master's of science degree from Pace University in New York.

Michael Havin has been Corporate Secretary since August 1996. Prior to joining the Company he practiced as a commercial attorney in Jerusalem from 1991 to 1995 and in Melbourne, Australia, from 1983 to 1989. He is qualified to practice law both in Israel and in Australia and holds bachelor of laws and bachelor of arts degrees from Monash University in Melbourne, Australia.

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The Articles of Association of the Company (the **Articles** ) provide that any director may, by written notice to the Company, appoint another person to serve as an alternate director provided such appointment is approved by a majority of the directors then in office, and may remove such alternate. Any alternate director shall be entitled to notice of meetings of the Board of Directors and of relevant committees and to attend and vote

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accordingly, except that the alternate has no standing at any meeting at which the appointing director is present or at which the appointing director is not entitled to participate as provided in the Companies Law. A person who is not qualified to be appointed as a director, or a person who already serves as a director or an alternate director, may not be appointed as an alternate director. Unless the appointing director limits the time or scope of the appointment, the appointment is effective for all purposes until the appointing director ceases to be a director or terminates the appointment. The appointment of an alternate director does not in itself diminish the responsibility of the appointing director, as a director. An alternate director is solely responsible for his or her actions and omissions and is not deemed an agent of the appointing director. At present, there are no appointments of alternate directors in effect.

The Articles also provide that the Board of Directors may delegate any, or substantially all, of its powers to one or more committees of the Board of Directors, and may entrust to and confer upon a Managing Director such of its powers as it deems appropriate. However, the Companies Law provides that certain powers and authorities (for example, the power to issue shares, to grant options to purchase shares or to approve the financial statements) may not be delegated, and may be exercised only, by the Board of Directors.

**6.B Compensation**

The following table sets forth, with respect to all directors and officers of the Company as a group, all remuneration paid by the Company during the fiscal year ended December 31, 2002:

	<b>Cash and cash equivalent forms of remuneration</b>	
	<b>Salaries, fees, directors fees, commissions and bonuses</b>	<b>Securities or property, insurance benefits or reimbursement and personal benefits</b>
All directors and officers as a group (consisting of 17 persons, including two persons who are no longer directors or officers)	\$ 2,453,774	\$ 439,116

On August 28, 2000, the shareholders of the Company approved the awards of options to purchase a total of 204,000 Ordinary Shares to the directors of the Company, pursuant and subject to the terms of the 2000 Plan. These awards are comprised of an option to the Chief Executive Officer of the Company (who is also a director of the Company) to purchase 150,000 Ordinary Shares and options to purchase 6,750 Ordinary Shares to each of the other eight directors of the Company. These options are all at an exercise price of \$66.42 per Ordinary Share, vest over a four year period and will expire on August 27, 2005. As at March 31, 2003, each such option had vested as to 50% of the Ordinary Shares subject thereto.

In addition, on November 8, 2001, the shareholders of the Company approved the awards of options to purchase a total of 168,500 Ordinary Shares to those directors of the Company who are not external directors of the Company, pursuant and subject to the terms of the 2000 Plan. These awards are comprised of an option to the Chief Executive Officer of the Company to purchase 125,000 Ordinary Shares and options to purchase 7,250 Ordinary Shares to each of the other six non-external directors of the Company (one of whom is an officer of the Company). These options are all at an exercise price of \$22.27 per Ordinary Share, vest over a four year period and will expire on November 7, 2006. As at March 31, 2003, none of these options had vested.

None of the directors holds any other options to purchase Ordinary Shares. For information as to options awarded during 2002 to directors and officers as a group, see Item 6.E Share Ownership. For information concerning a proposed award of an option to one director, which has been approved by the Audit Committee and Board of Directors but not yet ratified by the shareholders of the Company, see Item 7.B Related Party Transactions. The amounts referred to in the remuneration table above do not include the value of options awarded to the directors or officers of the Company.

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Under arrangements approved by the Audit Committee, the Board of Directors and the shareholders of the Company, each of the external directors and those members of the Board of Directors who are not, or will in the future cease to be, employees of the Company are compensated as follows: (i) an annual payment to each of such directors, for as long as they are directors, of \$10,000 plus applicable value added tax ( **VAT** ); and (ii) a payment of \$500 plus VAT for every meeting of the Board of Directors or any committee thereof in which they participate.

**6.C Board practices**

**(a) Membership of Board of Directors; External Directors**

The Board of Directors consists of three classes of directors (not including the two external directors who do not form part of any class), with one class being elected each year by shareholders at the Company's annual general meeting for a term of approximately three years. Directors so elected cannot be removed from office by the shareholders until the expiration of their term of office. At the Company's 2001 annual general meeting, all of the directors of the Company (other than the external directors) were designated into one of the three different classes. The external directors, who currently serve three year terms as required by Israeli law, do not form part of any class and are elected according to the Companies Law.

The three classes of directors are designated Class I Directors, Class II Directors and Class III Directors. The current terms of the Class I Directors will expire at the annual general meeting of shareholders to be held in 2005, the current terms of the Class II Directors will expire at the annual general meeting of shareholders to be held in 2003 and the current terms of the Class III Directors will expire at the annual general meeting of shareholders to be held in 2004. Mr. Dan Falk and Mr. Yochai Richter are the current Class I Directors, Dr. Shlomo Barak, Mr. Uzia Galil and Dr. Shimon Ullman are the current Class II Directors and Mrs. Yehudit Bronicki and Dr. Jacob Richter are the current Class III Directors. In accordance with the Articles, any vacancies on the Board of Directors, including unfilled positions, may be filled by a majority of the directors then in office, and each director chosen in this manner would hold office until the next annual general meeting of the Company (or until the earlier termination of his or her appointment as provided for in the Companies Law or the Articles).

The Articles provide that the minimum number of members of the Board of Directors is three and the maximum number is eleven. The Board of Directors is presently comprised of nine members two of whom were appointed as external directors under the provisions of the Companies Law (discussed below), which appointments were ratified and approved by the shareholders at the Company's 2000 Annual General Meeting of Shareholders.

Under the Companies Law and the regulations promulgated pursuant thereto, Israeli companies whose shares have been offered to the public in, or that are publicly traded outside of, Israel are required to appoint at least two natural persons as external directors. No person may be appointed as an external director if the person, or a relative, partner or employer of the person, or any entity under the person's control, has or had, on or within the two years preceding the date of the person's appointment to serve as an external director, any affiliation with the company to whose board the external director is proposed to be appointed or with any entity controlling or controlled by such company or by the entity controlling such company. The term affiliation includes an employment relationship, a business or professional relationship maintained on a regular basis, control and service as an office holder (which term includes a director).

In addition, no person may serve as an external director if the person's position or other business activities create, or may create, a conflict of interest with the person's responsibilities as an external director or interfere with the person's ability to serve as an external director or if the

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person is a member or employee of the Israel Securities Authority or of an Israeli stock exchange. If, at the time of election of an external director, all other directors are of the same gender, the external director to be elected must be of the other gender.

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External directors are elected for a term of three years and may be re-elected for one additional three-year term. Each committee of a company's board of directors that has the authority to exercise powers of the board of directors is required to include at least one external director and its audit committee must include all external directors.

External directors are elected at the general meeting of shareholders by a simple majority, provided that the majority includes at least one-third of the shareholders who are not controlling shareholders, who are present and voting, or that the non-controlling shareholders who vote against the election hold one percent or less of the voting power of the company. Notwithstanding the above, regulations under the Companies Law provide that with respect to companies such as the Company, whose shares are traded on a stock exchange outside of Israel, the board of directors may determine that a director appointed prior to February 1, 2000 (the effective date of the Companies Law), who meets the above qualifications, be deemed an external director even if the person served as a director when the Companies Law became effective. In such case shareholder approval is not required.

At its meeting held on June 21, 2000, Mrs. Yehudit Bronicki was appointed as a member of the Board of Directors, and, subsequently, at the same meeting, the Board of Directors designated and appointed Dr. Michael Anghel and Mr. Gideon Lahav (who have served on the Board of Directors since 1986 and 1998, respectively) to serve as external directors in accordance with the provisions of the Companies Law and regulations thereunder, for a term of three years.

Under the Companies Law an external director cannot be dismissed from office unless: (i) the board of directors determines that the external director no longer meets the statutory requirements for holding the office, or that the external director is in breach of the external director's fiduciary duties and the shareholders vote, by the same majority required for the appointment, to remove the external director after the external director has been given the opportunity to present his or her position; (ii) a court determines, upon a request of a director or a shareholder, that the external director no longer meets the statutory requirements of an external director or that the external director is in breach of his or her fiduciary duties to the company; or (iii) a court determines, upon a request of the company or a director, shareholder or creditor of the company, that the external director is unable to fulfill his or her duty or has been convicted of specified crimes.

For information as to directors' service contracts with the Company providing for benefits on termination of employment, see Item 7.B.

### ***(b) Audit and Remuneration Committees***

#### ***(i) Audit Committee***

The Companies Law requires public companies to appoint an audit committee comprised of at least three directors, including all of the external directors, and further stipulates that the chairman of the board of directors, any director employed by or providing other services to a company and a controlling shareholder or any relative of a controlling shareholder may not be members of the audit committee. The responsibilities of the audit committee include identifying flaws in the management of a company's business, making recommendations to the board of directors as to how to correct them and deciding whether to approve actions or transactions which by law require audit committee approval. An audit committee may not approve an action or transaction with a controlling shareholder or with an office holder unless at the time of approval two external directors are serving as members of the audit committee and at least one of them is present at the meeting in which the approval is granted.

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The Audit Committee provides assistance to the Board of Directors in fulfilling its legal and fiduciary obligations with respect to matters involving the accounting, auditing, financial reporting and internal control functions of the Company. In carrying out these duties, the Audit Committee meets at least once in each fiscal quarter with management at which time, among other things, it reviews, and either approves or disapproves, the



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financial statements of the Company for the immediately preceding fiscal quarter and conveys its conclusions in this regard to the Board of Directors. The Audit Committee also monitors generally the services provided by the Company's external auditors to ensure their independence, and reviews, and either approves or disapproves, all audit and non-audit services provided by them. The Company's external and internal auditors also report regularly to the Audit Committee at its meetings, and the Audit Committee discusses with the Company's external auditors the quality, not just the acceptability, of the accounting principles, the reasonableness of significant judgments and the clarity of disclosures in the Company's financial statements, as and when it deems it appropriate to do so.

Under the provisions of the Sarbanes-Oxley Act of 2002, the Audit Committee will be responsible for the appointment, compensation, retention and oversight of the work of the Company's external auditors. However, under Israeli law, the appointment of external auditors and their compensation require the approval of the shareholders of the Company. Pursuant to Israeli law, the shareholders may delegate the authority to determine the compensation of the external auditors to the Board of Directors, and the Company's shareholders have done so in the past. Accordingly, in the future, the appointment of the external auditors will be required to be approved and recommended to the shareholders by the Audit Committee and ratified by the shareholders. The compensation of the external auditors will be required to be approved by the Audit Committee and recommended to the shareholders or, if so authorized by the shareholders, the Board of Directors and ratified by the shareholders or the Board of Directors, as the case may be.

The following table provides information regarding fees paid by the Company to Kesselman and/or other members of PricewaterhouseCoopers International Limited (of which Kesselman is a member) for all services, including audit services, for the years ended December 31, 2002 and December 31, 2001:

	2002	2001
Audit and Audit Related Fees(1)	\$ 622,000	\$ 522,000
Tax Fees(2)	\$ 241,000	\$ 206,000
<b>Total</b>	<b>\$ 863,000</b>	<b>\$ 728,000</b>

(1) Includes fees for statutory audits, consents, assistance with and review of SEC filings and other related matters.

(2) Includes fees for statutory tax filings and tax advisory services.

*(ii) Remuneration Committee*

The role of the Remuneration Committee is to provide assistance and make independent recommendations to the Board of Directors concerning matters related to the compensation of directors and certain executive employees of the Company. In carrying out these duties, the Remuneration Committee meets on an ad hoc basis (usually at least once in each fiscal quarter). The Remuneration Committee is also authorized to administer the Company's employee option plans. Under the Companies Law, the Remuneration Committee may only make recommendations to the Board of Directors concerning the grant of options and may need to seek the approval of the Audit Committee, the Board of Directors and the shareholders for certain compensation decisions.

**6.D Employees**

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As of December 31, 2002, the Company employed 1,396 people, of whom 754 were based in Israel, 68 in the United States, 155 in Europe, 313 in the Pacific Rim and 106 in Japan. Of these employees, 338 were employed in research and development, 553 in marketing, sales and service, 226 in production and 279 in management and administration.

The Company considers its relations with its employees to be good and has not experienced a labor dispute or strike. Approximately 65% of the Company's employees have advanced technical and academic qualifications.

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The Company is not a party to any collective bargaining agreement with respect to its Israeli employees. However, the Company is subject to certain labor related statutes and to certain provisions of collective bargaining agreements between the Histadrut (General Federation of Labor in Israel) and the Coordinating Bureau of Economic Organizations (including the Industrialists Association) which are applicable to the Company's Israeli employees by virtue of expansion orders of the Israeli Minister of Labor and Welfare. These statutes and provisions cover a wide range of subjects and provide certain minimum employment standards including the length of the work day and work week, minimum wages, contributions to a pension fund, insurance for work-related accidents, procedures for dismissing employees, determination of severance pay, annual and other vacations, sick pay and other conditions of employment. The Company generally provides its employees with benefits and working conditions beyond the required minimum. An additional significant provision applicable to all employees in Israel under collective bargaining agreements and expansion orders is the automatic adjustment of wages in relation to increases in the Israeli CPI. The amount and frequency of these adjustments are modified from time to time.

**6.E Share Ownership**

**(a) General**

The Company presently administers three employee stock option plans: the 1992 Plan, which was adopted in order to enable the Israeli employees of the Company to obtain the benefit of certain provisions of the Israeli Income Tax Ordinance (New Version), 1961 (the **Tax Ordinance**); the 1995 Plan, which was adopted to provide for the grant of options to employees of the Company's foreign subsidiaries; and the 2000 Plan, which was adopted to provide incentives to employees, officers, directors and/or consultants of the Company and certain other related entities by providing them with the opportunity to purchase shares of the Company. The Company has also granted an option to a consultant of the Company, pursuant to the 1998 Plan.

In June 2000, the Board of Directors adopted a general policy not to award options under any of the Company's option plans at less than the fair market value of the Ordinary Shares at the time of the grant, and also resolved that all newly awarded options under any of these plans shall expire not later than five years after their respective grant dates. Options under all of these plans also generally expire when the grantee ceases to be an employee of, or consultant to, the Company or any of its subsidiaries. New options may be awarded under a given option plan in respect of Ordinary Shares previously subject to cancelled or expired options, provided that the relevant option plan has not terminated.

For further information concerning stock options, see Notes 1r and 9 to the Consolidated Financial Statements listed in Item 18.

**(b) The 1992 Plan**

On January 23, 1992, in order to enable the Israeli employees of the Company to benefit from the provisions of Section 102 of the Tax Ordinance, the Board of Directors adopted, and the Company's shareholders subsequently approved, the 1992 Plan, a stock option plan under which, as amended with shareholder approval, options to purchase an aggregate of 3,095,718 Ordinary Shares were, from time to time over the term of the 1992 Plan, available to be awarded to certain key employees of the Company and/or other entities in Israel in which the Company held at least a 50% equity interest. The exercise prices of options granted under the 1992 Plan prior to June 2000 were not less than 85% of the fair market value of the Ordinary Shares on the date of the grant, and such options, if unexercised, expired not later than eight years following the date of grant. The 1992 Plan, which terminated on January 22, 2002 (except as to option awards outstanding on that date), is, subject to the provisions of the Companies Law, administered by the Remuneration Committee.

During 2002, options to purchase a total of 24,150 and 72,130 Ordinary Shares (having respective weighted average exercise prices of \$40.11 and \$10.54 per share) were cancelled and exercised, respectively, under this

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Plan. As of March 31, 2003, under this Plan, options to purchase a total of 947,389 Ordinary Shares, expiring on various dates between June 30, 2003 and September 17, 2008 and having a weighted average remaining life of 3.58 years and a weighted average exercise price of \$27.43 per share, were outstanding (of which 758,915 with a weighted average remaining life of 3.46 years and a weighted average exercise price of \$24.26 per share had vested), and no options to purchase Ordinary Shares remained available for future grants.

***(c) The 1995 Plan***

On June 22, 1995, the Board of Directors adopted, and the Company's shareholders subsequently approved, the 1995 Plan which has been amended from time to time, with shareholder approval when required. Under the 1995 Plan, which is, subject to the provisions of the Companies Law, administered by the Remuneration Committee, options to purchase an aggregate of 3,931,068 Ordinary Shares have, from time to time over the term of the 1995 Plan, been available to be awarded to certain officers, directors, key employees and consultants of subsidiaries of the Company. Options under the 1995 Plan may not be awarded to persons who are also officers, directors or employees of the Company at the time of the award. The 1995 Plan authorizes the granting of incentive stock options (ISOs) complying with the United States tax provisions for those participants subject to United States tax law, and nonqualified stock options which do not comply with such United States tax law provisions. The exercise prices of options granted under the 1995 Plan prior to June 2000 were, in the case of ISOs, not less than 100% of the fair market value of the Ordinary Shares on the date of the grant and, in the case of awards that were not ISOs, not less than 85% of such fair market value. The 1995 Plan will terminate on June 21, 2005 (except as to option awards outstanding on that date).

During 2002, options to purchase a total of 555,719, 291,299 and 80,314 Ordinary Shares (having respective weighted average exercise prices of \$19.14, \$32.21 and \$12.05 per share) were awarded, cancelled and exercised, respectively, under this Plan. As of March 31, 2003, under this Plan, options to purchase a total of 2,022,643 Ordinary Shares, expiring on various dates between September 30, 2003 and April 16, 2010 and having a weighted average remaining life of 4.30 years and a weighted average exercise price of \$27.26 per share, were outstanding (of which 775,920 with a weighted average remaining life of 5.10 years and a weighted average exercise price of \$28.28 per share had vested), and options to purchase 1,051,346 Ordinary Shares (including 12,125 that had been designated but not yet priced) remained available for future grants (other than to the Company's directors and officers).

***(d) The 1998 Plan***

On April 7, 1998, an option to purchase 33,750 Ordinary Shares was granted without shareholder approval to an independent consultant of the Company under the 1998 Plan at an exercise price of \$12.55 per Ordinary Share, and otherwise upon the terms and conditions applicable to grants made under the 1992 Plan. This option vests over a four year period and will expire on April 6, 2006.

During 2002, this option was not exercised as to any Ordinary Shares, nor were additional options to purchase Ordinary Shares either awarded or cancelled under the 1998 Plan. As of March 31, 2003, this option was fully vested as to the remaining 24,375 Ordinary Shares, and no Ordinary Shares remained available for future grants under the 1998 Plan.

***(e) The 2000 Plan***

On June 21, 2000, in anticipation of the expiration of the 1992 Plan, the Board of Directors adopted, and the Company's shareholders subsequently approved, the 2000 Plan, which is intended to provide incentives to employees, officers, directors and/or consultants of the

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Company and/or of other companies, partnerships or other entities in Israel in which the Company holds at least a 50% equity interest (each a **Related Company** ), by providing them with the opportunity to purchase shares of the Company. Under the 2000 Plan, options to purchase an aggregate of 3,300,000 Ordinary Shares may, from time to time, be awarded to any employee, officer, director and/or consultant of the Company or of a Related Company. The 2000 Plan is, subject to the

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provisions of the Companies Law, administered by the Remuneration Committee, and is designed: (i) to comply with Section 102 of the Tax Ordinance or any provision which may amend or replace it and rules promulgated thereunder and to enable the Company and grantees thereunder to benefit from Section 102 of the Tax Ordinance and the Commissioner's Rules; and (ii) to enable the Company to grant options and issue shares outside the context of Section 102 of the Tax Ordinance. The 2000 Plan will terminate on June 20, 2010 (except as to option awards outstanding on that date).

During 2002, options to purchase a total of 834,131 and 244,138 Ordinary Shares (having respective weighted exercise prices of \$19.82 and \$31.92 per share) were awarded and cancelled, respectively, under this Plan. As of March 31, 2003, under this Plan, options to purchase a total of 2,906,168 Ordinary Shares, expiring on various dates between September 30, 2003 and March 19, 2008 and having a weighted average remaining life of 3.41 years and a weighted average exercise price of \$30.72 per share, were outstanding (of which 500,958 with a weighted average remaining life of 2.45 years and a weighted average exercise price of \$50.62 per share had vested), and options to purchase 393,832 Ordinary Shares (including 50,375 that had been designated but not yet priced) remained available for future grants.

As a result of an amendment to Section 102 of the Tax Ordinance as part of the recent Israeli tax reform, and pursuant to an election made by the Company thereunder, capital gains derived by optionees arising from the sale of shares pursuant to the exercise of options granted to them under Section 102 after January 1, 2003, will be subject to a flat capital gains tax rate of 25%. Previously, such gains were taxed as salary income at the employee's marginal tax rate (which could be up to 50%). However, as a result of this election, the Company will no longer be allowed to claim as an expense for tax purposes the amounts credited to such employees as a benefit when the related capital gains tax is payable by them, as the Company had previously been entitled to do under Section 102. For certain information as to the Israeli tax reform, see Item 10.

*(f) Certain information concerning options of directors and officers*

The following table sets forth for all directors and officers of the Company as a group, including all persons who were at any time during the period indicated directors or officers of the Company, certain information in respect of each of the 1992 Plan, the 1995 Plan and the 2000 Plan (expressed in terms of Ordinary Shares except where indicated otherwise) concerning: (i) options granted by the Company between January 1, 2002 and December 31, 2002; (ii) options which were exercised and paid, and cancelled, between such dates; and (iii) options which were unexercised and unpaid on, and as at, December 31, 2002. The table does not include information concerning options under the 1998 Plan since no options have been granted to any directors or officers of the Company under that plan.

	Plan		
	1992	1995	2000
<b>Granted:</b>			
Number of Ordinary Shares	0	0	152,625
Weighted average exercise price per Ordinary Share	N/A	N/A	\$ 19.40
Year of expiration	N/A	N/A	2007
<b>Exercised/Paid:</b>			
Number of Ordinary Shares	33,200	0	0
Weighted average exercise price per Ordinary Share	\$ 10.41	N/A	N/A
<b>Cancelled:</b>			
Number of Ordinary Shares	11,250	0	87,750
Weighted average exercise price per Ordinary Share	\$ 36.76	N/A	\$ 24.93
<b>Unexercised/Unpaid:</b>			
Number of Ordinary Shares	221,099	34,875	693,750

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Weighted average exercise price per Ordinary Share	\$	24.10	\$	34.12	\$	37.94
Weighted average remaining life (years)		3.09		6.30		3.32



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See Item 6.B Compensation for information as to options to purchase Ordinary Shares held by each director of the Company.

***(g) Certain information concerning Ordinary Shares owned by directors and officers***

The following table sets forth information as of March 31, 2003, concerning the shareholdings of those directors and officers of the Company known to the Company beneficially to own, on an individual basis, more than 1% of the outstanding Ordinary Shares and of each other director of the Company. Other than as specified in the table below, the Company is not aware of the beneficial ownership by any of its directors or officers, on an individual basis, of more than 1% of the outstanding Ordinary Shares.

Name	Number of Shares	Percentage of Ordinary Shares Outstanding
Jacob Richter	1,405,755	4.40%(1)
Yochai Richter	1,240,755	3.87%(1)
Michael Anghel	0	(2)
Shlomo Barak	0	(2)
Yehudit Bronicki(3)	0	(2)
Dan Falk	10,000	(2)
Uzia Galil	10,500	(2)
Gideon Lahav	0	(2)
Shimon Ullman	113,355	(2)

- (1) The percentage of Ordinary Shares beneficially owned is calculated in accordance with Rule 13d-3(d) promulgated under the Exchange Act.
- (2) Less than 1%.
- (3) This number does not include 299,122 Ordinary Shares held by Ormat, which Mrs. Yehudit Bronicki, who is a member of the Board of Directors, may be deemed beneficially to own by virtue of her shareholdings in, and position with, Ormat.

**Table of Contents****Item 7. Major Shareholders and Related Party Transactions****7.A Major Shareholders**

The following table sets forth information as of March 31, 2003 (except as noted below), concerning: (i) the only persons or entities known to the Company beneficially to own more than 5% of the outstanding Ordinary Shares; and (ii) the number of outstanding Ordinary Shares beneficially owned by all directors and officers as a group.

<b>Identity of Person or Group</b>	<b>Number of Shares(1)</b>	<b>Percentage of Ordinary Shares Outstanding(1)</b>
Harris Associates L.P.(2) Two North LaSalle Street, Suite 500 Chicago, Illinois 60602	3,836,300	12.00%
Capital Research and Management Company(3) 333 South Hope Street Los Angeles, California 90071	3,581,500	11.20%
Capital Group International, Inc.(4) 11100 Santa Monica Boulevard, Suite 1500 Los Angeles, California 90025	3,115,500	9.74%
J. & W. Seligman & Co. Incorporated(5) 100 Park Avenue New York, New York 10017	2,996,029	9.37%
FMR Corp. 82 Devonshire Street Boston, Massachusetts 02109(6)	2,833,500	8.86%
All directors and officers as a group (consisting of 15 persons)(7),(8)	3,131,594	9.70%

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- (1) The Company had outstanding, on March 31, 2003, 31,976,003 Ordinary Shares. This number does not include a total, as at that date, of 7,345,753 Ordinary Shares, 5,900,575 of which were subject to outstanding stock options granted pursuant to the Company's stock option plans (of which 2,060,168 had vested) and 1,445,178 of which (including 62,500 that had been designated but not yet priced) remained available for future option grants pursuant to such plans, comprised of:
- (a) 947,389 Ordinary Shares issuable pursuant to options under the 1992 Plan, all of which were subject to options that had been granted (of which 758,915 had vested);
  - (b) 3,073,989 Ordinary Shares issuable pursuant to options under the 1995 Plan, of which:
    - (i) 2,022,643 Ordinary Shares were subject to options that had been granted (of which 775,920 had vested); and
    - (ii) 1,051,346 Ordinary Shares (including 12,125 that had been designated but not yet priced) remained available for future option grants pursuant to the 1995 Plan;
  - (c) 24,375 Ordinary Shares issuable pursuant to an option granted to a consultant to the Company under the 1998 Plan, which had fully vested; and
  - (d) 3,300,000 Ordinary Shares issuable pursuant to options under the 2000 Plan, of which:
    - (i) 2,906,168 Ordinary Shares were subject to options that had been granted (of which 500,958 had vested); and

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- (ii) 393,832 Ordinary Shares (including 50,375 that had been designated but not yet priced) remained available for future option grants pursuant to the 2000 Plan.

Also does not include 483,000 Ordinary Shares purchased by the Company during 2000 and held as treasury shares under Israeli law. For so long as such Ordinary Shares are owned by the Company they have no rights and, accordingly, are neither eligible to participate in or receive any future dividends which may be issued to shareholders of the Company nor are they entitled to participate in, be voted at or be counted as part of the quorum for, any meetings of shareholders of the Company.

- (2) As of December 31, 2002, based on reports filed with the SEC dated February 6, 2003. These reports indicated shared voting power as to all 3,836,300 Ordinary Shares, sole dispositive power as to 1,570,100 of such Ordinary Shares and shared dispositive power as to 2,266,200 of such Ordinary Shares. Harris Associates L.P. serves as an investment advisor to the Harris Associates Investment Trust which, through its various series, had shared and dispositive power as to 3,266,200 of such Ordinary Shares, including 2,041,200 Ordinary Shares beneficially owned by The Oakmark International Fund, a series of the Harris Associates Investment Trust.
- (3) As of December 31, 2002, based on a report filed with the SEC dated February 10, 2003. This report indicated sole dispositive power as to all 3,581,500 Ordinary Shares by Capital Research and Management Company( **CRMC** ), a registered investment advisor to various registered investment companies. CRMC disclaims beneficial ownership as to all Ordinary Shares reported.
- (4) As of December 31, 2002, based on a report filed with the SEC dated February 10, 2003. This report indicated sole voting power and sole dispositive power as to all 3,115,500 Ordinary Shares by Capital Group International ( **CGII** ), sole voting power as to 811,225 of such Ordinary Shares and sole dispositive power as to 3,100,950 of such Ordinary Shares by Capital International, Inc. ( **CII** ), a registered investment advisory subsidiary of CGII, and sole voting power as to 2,289,725 of such Ordinary Shares by Emerging Markets Growth Fund, Inc., a registered investment company for which CII acts as investment advisor. CGII and CII disclaim beneficial ownership as to all Ordinary Shares reported.
- (5) As of December 31, 2002, based on a report filed with the SEC dated February 11, 2003. The report indicated shared voting power as to 2,993,629 Ordinary Shares and shared dispositive power as to all 2,996,029 Ordinary Shares by J. & W. Seligman & Co. Incorporated ( **JWS** ) and by William C. Morris, the owner of a majority of the outstanding voting securities of JWS. The report also indicated shared voting power and shared dispositive power as to 2,640,000 of such Ordinary Shares by Seligman Communications & Information Fund, Inc., a fund for which JWS acts as an investment advisor.
- (6) As of December 31, 2002, based on a report filed with the SEC dated February 14, 2003. The report indicated sole dispositive power as to all 2,833,500 Ordinary Shares by FMR Corp. and by Edward C. Johnson 3<sup>rd</sup> and Abigail P. Johnson, who are part of a controlling group of FMR Corp. FMR Corp. controls Fidelity Management & Research Company, a registered investment advisor which is also a beneficial owner of such 2,833,500 Ordinary Shares, all of which are also beneficially owned by Fidelity Low Priced Stock Fund, a registered investment company.
- (7) Includes Ordinary Shares issuable upon the exercise of vested options referred to in footnote 1 above but does not include Ordinary Shares which may become issuable upon the exercise of those options referred to in footnote 1 above which have not yet vested, except to the extent the options become exercisable within 60 days. The percentage of Ordinary Shares beneficially owned is calculated in accordance with Rule 13d 3(d) promulgated under the Exchange Act.
- (8) This number does not include: (a) 299,122 Ordinary Shares held by Ormat, which Mrs. Yehudit Bronicki, who is a member of the Board of Directors, may be deemed beneficially to own by virtue of her shareholdings in, and position with, Ormat; or (b) Ordinary Shares issuable pursuant to unvested options outstanding as of March 31, 2003, other than those included pursuant to footnote 7 above.

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On March 31, 2003, there were 58 shareholders of record of the Ordinary Shares in the United States, who, among them, held a total of 29,075,862 Ordinary Shares, constituting approximately 90.93% of the outstanding Ordinary Shares as at that date.

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The Articles provide that each Ordinary Share shall confer upon its holder the right to vote in general meetings of the Company. All outstanding Ordinary Shares (other than treasury shares) have equal rights.

***7.B Related Party Transactions***

Yochai Richter has an employment agreement with the Company pursuant to which he serves as general manager. The agreement is terminable by Mr. Richter on 60 days notice and by the Company on 30 days notice as required by law. Upon termination, Mr. Richter is entitled to a lump sum payment equal to twelve times his previous monthly salary plus certain benefits. He would also receive severance pay equal to 150% of his last monthly salary payment times the number of years employed (commencing with his employment by Orbot in 1982) if he resigns and 200% of such payment times the number of years employed if the Company terminates the agreement other than for cause (in which case his severance payment would be between zero and half such amount).

Each year, prior to the annual general meeting of shareholders of the Company, the Remuneration Committee, the Audit Committee and the Board of Directors consider whether and, if so, upon what criteria, terms and conditions, to award an annual bonus for the current year to Yochai Richter, who is the Chief Executive Officer and a director of the Company. Under Israeli law, any proposal involving the award of a bonus to Mr. Richter requires the approval of the shareholders of the Company.

In 2002, the annual bonus for Mr. Richter, which was so approved, was 1% of the net annual profit of the Company for 2002, payable upon approval by the Board of Directors of the Company's 2002 audited financial statements. No bonus was payable to Mr. Richter in respect of 2002.

On the closing date of the Merger, the Company and certain former shareholders of Orbotech and Orbot, including Messrs. Richter and Falk, Dr. Richter and Dr. Ullman, entered into a registration rights agreement (the **Registration Rights Agreement**) under which the Company agreed, under certain circumstances, to register for sale under the United States Securities Act of 1933 (the **U.S. Securities Act**) the Ordinary Shares owned by such shareholders. All expenses incurred in effecting registrations under the Registration Rights Agreement were to be paid by the Company, other than incremental registration and filing fees, underwriting discounts and commissions and the fees and disbursements of counsel to such shareholders, which were to be paid by such shareholders.

Subject to a certain minimum number of Ordinary Shares to be offered and to certain procedural requirements, such shareholders had the right to require the Company to register Ordinary Shares under the U.S. Securities Act, but the Company was not required to file more than one registration statement under the U.S. Securities Act each year at the request of such shareholders, nor to file more than two such registrations during the term of the Registration Rights Agreement at the request of the former shareholders of Orbot. Additionally, subject to certain procedural requirements and marketing restrictions, such shareholders had the right to participate in registrations otherwise made by the Company under the U.S. Securities Act. The Company agreed to indemnify the shareholders against certain liabilities, including liabilities under the U.S. Securities Act, in connection with any registered offerings in which they participated. The Registration Rights Agreement terminated on October 27, 2002.

The Audit Committee and the Board of Directors have approved a proposal pursuant to which the Company would engage Dr. Shlomo Barak, who is the Chairman of the Board of Directors, as a consultant and advisor to the Company to assist it in identifying and creating directions and opportunities for the development and expansion of its business and for the application of its technology and resources, and to participate in pursuing such opportunities. The Company would compensate him for these services by the payment of \$10,000 plus VAT per month,

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commencing January 1, 2003, and the one-time grant to him of an option to purchase 50,000 Ordinary Shares. Under Israeli law, this proposal requires the approval of the shareholders of the Company. If so approved: (i) the option to Dr. Barak would be granted as part of, and out of shares available for grant under, the

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2000 Plan, on the date of the Company's 2003 annual general meeting of shareholders and would vest, in equal installments, over a four year period beginning as of January 1, 2003, provided that Dr. Barak is still rendering these consulting and advisory services to the Company on each such vesting date; and (ii) for as long as Dr. Barak serves as a director, the above payment will include any director's fees from the Company (whether by way of annual or per meeting payments) to which he would otherwise have been entitled.

***7.C Interests of Experts and Counsel***

Not applicable in Annual Report on Form 20-F.

**Item 8. *Financial Information***

***8.A Consolidated Statements and Other Financial Information***

***(a) Consolidated Financial Statements***

See Item 18 Financial Statements and pages F-1 through F-40.

***(b) Export Sales***

See Note 14a to the Consolidated Financial Statements listed in Item 18.

***(c) Legal Proceedings***

The Company is not currently, nor has it in the past been, party to any legal or arbitration proceedings, including any relating to bankruptcy, receivership or similar matters or any governmental proceedings known to the Company, the resolution of which against the Company would have, in the case of current proceedings, or has had in the past, a material adverse effect on the Company's financial position or profitability.

***(d) Dividend Policy***

The Company does not have any current plans to pay dividends.



**8.B Significant Changes**

For information as to any significant change which has occurred since the date of the annual financial statements included in this Annual Report, see Item 5.D Trend Information.

**Table of Contents****Item 9. The Offer and Listing****9.A Offer and Listing Details**

Except as set forth below, the information called for in this Item is not applicable in an Annual Report on Form 20-F.

The following table sets forth, in Dollars, the high and low reported sales prices of the Ordinary Shares on Nasdaq during the periods indicated.

<u>Year</u>	<u>Period</u>	<u>High</u>	<u>Low</u>
1998	Full Year	21.222	9.333
1999	Full Year	54.333	17.444
2000	Full Year	77.292	36.000
2001	Full Year	52.563	16.710
	First Quarter	52.563	24.250
	Second Quarter	40.390	25.688
	Third Quarter	36.250	16.710
	Fourth Quarter	32.300	18.240
2002	Full Year	33.000	9.610
	First Quarter	33.000	22.800
	Second Quarter	31.150	21.740
	Third Quarter	23.350	14.590
	Fourth Quarter	18.000	9.610
	October	15.320	9.610
	November	18.000	11.720
	December	17.640	13.308
2003	Full Year (through April 25)	15.650	10.500
	First Quarter	15.650	10.500
	January	15.650	12.841
	February	13.590	10.800
	March	12.170	10.500
	Second Quarter (through April 25)	14.690	10.900
	April (through April 25)	14.690	10.900

\*\*\*\*\*

On December 31, 2002, there were 59 shareholders of record of the Ordinary Shares in the United States who, among them, held a total of 29,071,363 Ordinary Shares, constituting approximately 90.93% of the outstanding Ordinary Shares as at that date. Such holders of record

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include several who are nominees for certain beneficial owners, the exact number of whom is not known to the Company, but the Company believes there were in excess of 3,000 beneficial holders of the Ordinary Shares as at that date.

### ***9.B Plan of Distribution***

Not applicable in Annual Report on Form 20-F.

### ***9.C Markets***

The Company's Ordinary Shares are quoted on Nasdaq under the symbol ORBK.

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***9.D Selling Shareholders***

Not applicable in Annual Report on Form 20-F.

***9.E Dilution***

Not applicable in Annual Report on Form 20-F.

***9.F Expenses of Issue***

Not applicable in Annual Report on Form 20-F.

**Item 10. *Additional Information***

***10.A Share Capital***

Not applicable in Annual Report on Form 20-F.

***10.B Memorandum and Articles of Association***

The Memorandum of Association of the Company (the **Memorandum**) and the Articles (each in their original form) were registered on February 8, 1981, under registration number 51-087517-2 with the Israeli Registrar of Companies. In July 1984, the Company became a public company under Israeli company law, under registration number 52-003521-3. At the 2001 Annual General Meeting of Shareholders held on November 8, 2001, the shareholders adopted new articles of association as well as amendments to the Memorandum and the new articles of association.

Set forth below is a summary of certain provisions of the Memorandum, the Articles and the Companies Law. This description does not purport to be complete and is qualified in its entirety by reference to the full text of the Memorandum and Articles and by Israeli law. The Memorandum, in a form which reflects, integrated into the text, all amendments thereto since the Company's incorporation, and the Articles, in a form which reflects, integrated into the text, all amendments thereto since being adopted on November 8, 2001, are exhibits to this Annual Report.

*(a) Objects of the Company*

Pursuant to Section 2.A. of the Memorandum the principal object for which the Company was established is to engage in any form in the design, development, production, marketing and servicing of products and systems in the field of electro-optics.

*(b) Directors*

The Board of Directors consists of three classes of directors (not including the two external directors who do not form part of any class), with one class being elected each year by shareholders at the Company's annual general meeting for a term of approximately three years. Directors so elected cannot be removed from office by the shareholders until the expiration of their term of office. Ordinary Shares of the Company do not have cumulative voting rights. As a result, the holders of Ordinary Shares that represent a simple majority of the voting power represented at a shareholders' meeting and voting at the meeting have the power to elect all of the directors put forward for election, subject to specific requirements under the Companies Law with respect to the election of external directors. Under the Companies Law the Company is required to appoint at least two natural persons as external directors; such appointments are to be for a term of three years and may be extended for one additional three-year term. For further information as to these appointments, see Item 6 Directors, Senior Management and Employees.

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Under the Articles, a director shall vacate his or her office if that director dies; is declared bankrupt; is declared to be of unsound mind; resigns such office by notice in writing given to the Company; or is not re-elected by the shareholders upon expiration of his or her term at the relevant annual general meeting; or, if the director is a company, is wound-up.

In general, the management of the business of the Company is vested in the Board of Directors which may exercise all such powers of the Company, including the power to borrow or secure the payment of any sum or sums of money for the purposes of the Company, in such manner, at such times and upon such terms and conditions in all respects, as it thinks fit. The directors may, from time to time, appoint any one or more persons, whether or not directors, to be managing director(s), general manager(s), chief executive officer(s), president(s) or any similar function with a different title, for such period and upon such terms as the directors think fit, and may entrust to and confer upon such managing director(s), general manager(s), chief executive officer(s) or president(s) such of the powers of the Board of Directors as the directors think fit, and such powers may be made exercisable for such period or periods, and for such objects and purposes, and upon such terms and conditions, and subject to such restrictions, as the directors may determine.

### ***(c) Conflict of interest***

#### ***(i) Approval of Related Party Transactions***

The Companies Law requires that transactions between a company and its office holders or that benefit its office holders be approved as provided for in the Companies Law and the company's articles of association. The term office holder as defined in the Companies Law includes a director, managing director, general manager, chief executive officer, executive vice president, vice president, other managers directly subordinate to the managing director and any other person fulfilling or assuming any such position or responsibility without regard to such person's title. The approval of a majority of the disinterested members of the audit committee and of the board of directors is generally required and, in some circumstances, shareholder approval may also be required.

#### ***(ii) Disclosure by office holders***

The Companies Law requires that an office holder of a company promptly disclose to the company any personal interest that the office holder may have in an existing or proposed transaction by the company. The office holder must also disclose related material information and documents that the office holder has about the existing or proposed transaction. The office holder must further disclose the interests of any entity in which he or she is a 5% or greater shareholder, director or general manager, or in which the office holder has the power to appoint one or more directors or the general manager. If the transaction is an extraordinary transaction, the office holder must also disclose any personal interest of his or her spouse, siblings, parents, grandparents, descendants, spouse's descendants and the spouses of any of these people. This disclosure must be made no later than the first meeting of the board of directors at which the transaction is discussed. The disclosure is made to the board of directors and to the audit committee if it must approve the transaction. In those circumstances in which shareholder approval is also required, shareholders have the right to review any documents in the company's possession related to the proposed transaction. However, the company may prohibit a shareholder from reviewing the documents if the company believes the request was made in bad faith, the documents include trade secrets or patents or their disclosure could otherwise harm the company's interests.

#### ***(iii) Approval procedure***

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After the office holder complies with these disclosure requirements, the company may approve the transaction under the provisions of applicable law and its articles of association. If the transaction is with an office holder or with a third party in which the office holder has a personal interest, the approval must confirm that the transaction is not adverse to the company's interest. If the transaction is an extraordinary transaction, it must be approved as required by the articles of association and must also be approved by the audit committee and the board of directors. An extraordinary transaction is a transaction: (i) other than in the ordinary course of business; (ii) on terms other than on market terms; or (iii) that is likely to have a material impact on the company's profitability, assets or liabilities.

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In some circumstances, shareholder approval is required. A director with a personal interest in any matter may not generally be present at any audit committee or board of directors meeting where the matter is being considered, and may not vote on the matter.

### *(iv) Transactions with controlling shareholders*

The Companies Law extends the disclosure requirements applicable to an office holder to a controlling shareholder in a public company. A shareholder that holds 25% or more of the voting rights in a company would be considered a controlling shareholder for the purposes of these disclosure requirements if no other shareholder holds more than 50% of the voting rights. If two or more shareholders are interested parties in the same transaction, their shareholdings are combined for the purposes of calculating percentages. Some transactions between a public company and a controlling shareholder, or transactions in which a controlling shareholder has a personal interest but which are between a public company and another entity, require the approval of the audit committee, the board of directors and the shareholders. If required, shareholder approval must include at least one-third of the shareholders who have no personal interest in the transaction and are present and voting at the meeting. Alternatively, the total shareholdings of the disinterested shareholders who vote against the transaction must not represent more than one percent of the voting rights in the company. The Israeli Minister of Justice may determine a different percentage.

According to Article 73(a) of the Articles, subject to the provisions of the Companies Law, no office holder of the Company (which includes a director) shall be disqualified by such office from holding any office or place of profit within or outside the Company or with any company in which the Company shall be a shareholder or otherwise interested, or with any company which is a shareholder of, or otherwise interested in, the Company, or from contracting with the Company either as vendor, purchaser or otherwise, either on his or her own behalf or as a director of another company or member of a firm or otherwise, nor (unless and to the extent provided otherwise in the Companies Law) shall any such contract, or any contract or arrangement entered into by or on behalf of the Company in which any office holder shall be in any way interested, be void or voidable nor shall any office holder be liable to account to the Company for any profit arising from any such office or place of profit or realized by any such contract or arrangement by reason only of such office holder's holding that office or of the fiduciary relations thereby established. An office holder who knows that he or she has, directly or indirectly, a personal interest in any existing or contemplated contract or arrangement of the Company of the type described in Article 73(a) shall disclose to the Company the nature of this interest, as well as any material fact or document, without delay and no later than the meeting of the Board of Directors at which such contract or arrangement is first considered. Should the office holder acquire, or become aware of, such personal interest subsequently, that interest shall be disclosed without delay, and no later than the first meeting of the Board of Directors after the time at which it was acquired.

### *(d) Dividends*

Dividends may be distributed only out of profits available for dividends as determined by the Companies Law, provided that there is no reasonable concern that the distribution will prevent the Company from being able to meet its existing and anticipated obligations when they become due. Generally, under the Companies Law, the decision to distribute dividends and the amount to be distributed is made by a company's board of directors. The Articles provide that the Board of Directors may from time to time declare, and cause the Company to pay, such dividends as may appear to it to be justified by the profits of the Company and that the Board of Directors has the authority to determine the time for payment of such dividends and the record date for determining the shareholders entitled to receive such dividends, provided the date is not before the date of the resolution to distribute the dividend. Declaration of dividends does not require shareholder approval.

### *(e) Ordinary Shares*



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The registered capital of the Company is NIS 7,000,000 divided into 50,000,000 Ordinary Shares. All issued and outstanding Ordinary Shares of the Company are fully paid and non-assessable. Holders of Ordinary Shares

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have one vote for each Ordinary Share held on all matters to be voted on by shareholders, including the election of directors. Ordinary Shares do not entitle their holders to preemptive rights. The Memorandum and Articles and Israeli law do not restrict in any way the ownership or voting of Ordinary Shares by non-residents or persons who are not citizens of Israel, except with respect to subjects of nations which are in a state of war with Israel.

Subject to the rights of holders of shares with special rights (which may be issued in the future), holders of paid up Ordinary Shares are entitled to participate in the payment of dividends and, in the event of a winding-up of the Company, in the distribution of assets available for distribution, in proportion to the amount paid up or credited as paid up on account of the nominal value of the shares held by them respectively and in respect of which such dividend is being paid or such distribution is being made, without considering any premium those holders might have paid in excess of that nominal value.

Shares with preferential rights relating, among other things, to dividends, voting and repayment of share capital can be created by adoption of a resolution of the shareholders at a general meeting of shareholders at which a quorum is present, by a simple majority of the voting power represented at the meeting in person or by proxy and voting thereon. The Company can similarly subdivide issued and outstanding Ordinary Shares. Modification or abrogation of the rights of any class of shares requires the written consent of the holders of 75% of the issued shares of such a class or adoption of a resolution passed by a simple majority of those present in person or by proxy and voting at a separate general meeting of the holders of the shares of that class.

Ordinary Share certificates registered in the names of two or more persons are deliverable to the person first named in the share register and such delivery shall be deemed sufficient delivery to all co-owners. If two or more such persons tender a vote, the vote of the person whose name first appears in the share register will be accepted to the exclusion of any other. Notices may be given only to the person whose name first appears in the register. If two or more persons jointly hold or are entitled to a share, any one of them may give effectual receipt for any dividend payable or property distributable in respect of such share.

### ***(f) Transfer of Shares***

Ordinary Shares which have been fully paid-up are transferable, by submission of a proper instrument of transfer to the Company or its transfer agent together with the certificate of the shares to be transferred and such other evidence, if any, as the directors may require to prove the rights of the intending transferor in the transferred shares.

### ***(g) Shareholders Meetings***

The Articles provide that an annual general meeting must be held at least once in every calendar year, not later than 15 months after the last preceding annual general meeting, at such time and place as may be determined by the Board of Directors. The Board of Directors may, in its discretion, convene additional shareholder meetings and, pursuant to the Companies Law, must convene a meeting upon the demand of two directors or one quarter of the directors in office or upon the demand of the holder or holders of five percent of the Company's issued share capital and one percent of its voting rights or upon the demand of the holder or holders of five percent of its voting rights. All demands for shareholder meetings must set forth the items to be considered at that meeting. Pursuant to the Companies Law, the holder or holders of 1% of the Company's voting rights may request the inclusion of an item on the agenda of a future shareholder meeting, provided the item is appropriate for discussion at a shareholder meeting.

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Under the Companies Law, shareholder meetings generally require prior notice of not less than 21 days. The function of the annual general meeting is to elect directors in accordance with the Articles, receive and consider the profit and loss account, the balance sheet and the ordinary reports and accounts of the directors and auditors, appoint auditors and fix their remuneration and transact any other business which under the Articles or applicable law may be transacted by the shareholders of a company in general meeting.

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The quorum required for either an ordinary (regular) or an extraordinary (special) meeting of shareholders consists of at least two shareholders present in person or by proxy holding shares conferring in the aggregate more than 50% of the voting rights of the Company. If a meeting is convened by the Board of Directors upon the demand of shareholders or upon the demand of less than 50% of the directors then in office or directly by such shareholders or directors and no quorum is present within half an hour from the time appointed, it shall be cancelled. If a meeting is otherwise called and no quorum is present within such time, the meeting is adjourned to the same day one week later at the same time and place or at such other time and place as the Board of Directors may determine and specify in the notice of the general meeting and it shall not be necessary to give notice of such adjournment. If a quorum is not present within half an hour from the time stated for such adjourned meeting, any shareholders present in person or by proxy at such meeting shall constitute a quorum. Generally, under the Companies Law and the Articles, shareholder resolutions are deemed adopted if approved by the holders of a simple majority of the voting rights represented at a meeting and voting unless a different majority is required by law or pursuant to the Articles. The Companies Law provides that resolutions on certain matters, such as amending a company's articles of association, assuming the authority of the board of directors in certain circumstances, appointing auditors, appointing external directors, approving certain transactions, increasing or decreasing the registered share capital and approving a merger with another company must be made by the shareholders at a general meeting. A company may determine in its articles of association certain additional matters in respect of which resolutions by the shareholders in a general meeting will be required.

A company such as the Company, incorporated prior to February 1, 2000, is subject to various rules with respect to the transition from being governed by the Companies Ordinance to being governed by the Companies Law. These rules provide, among other things, that any amendment to the Memorandum or Articles will generally require a resolution adopted by the holders of 75% or more of the voting power represented at a general meeting and that the approval of a merger will require a resolution adopted by the holders of 75% or more of the voting power represented and voting at a general meeting, unless and until the Company amends the Articles in such manner to provide for a different majority. The Articles provide that all shareholder resolutions, other than with respect to the amendment or replacement of the Memorandum or Articles and certain other matters which by law require a different majority, but including with respect to certain actions which, pursuant to Israeli law, would otherwise require a majority of 75% of the votes cast, such as a change of corporate name, an increase in authorized share capital, a consolidation or division of the Company's share capital into shares of larger or smaller nominal value, a cancellation of unissued shares, a reduction of share capital, the creation of new classes, or the modification of the rights of classes, of shares and the approval of mergers, require only a simple majority of the votes cast. Subject to the Companies Law, a resolution in writing signed by the holders of all of the Ordinary Shares entitled to vote at a meeting of shareholders or to which all such shareholders have given their written consent will be sufficient to adopt the resolution in lieu of a meeting.

***(h) Changes in Control***

Under the Companies Law, a merger is generally required to be approved by the shareholders and board of directors of each of the merging companies. If the share capital of the company that will not be the surviving company is divided into different classes of shares, the approval of each class is also required, unless determined otherwise the court. Similarly, unless the court determines differently, a merger will not be approved if it is objected to by a majority of the shareholders present at the meeting, after excluding the shares held by the other party to the merger, by any person who holds 25% or more of the other party to the merger and by the relatives of and corporations controlled by these persons. Upon the request of a creditor of either party to the proposed merger, the court may delay or prevent the merger if it concludes that there exists a reasonable concern that, as a result of the merger, the surviving company will be unable to satisfy the obligations of any of the parties of the merger. Also, a merger can be completed only after all approvals have been submitted to the Israeli Registrar of Companies and 70 days have passed from the time that a proposal for approval of the merger was filed with the registrar.

The Companies Law also provides that an acquisition of shares in a public company must be made by means of a tender offer if, as a result of the acquisition, the purchaser would become a holder of 25% or more of

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the voting power at general meetings. This rule does not apply if there is already another holder of 25% or more of the voting power at general meetings. Similarly, the Companies Law provides that an acquisition of shares in a public company must be made by means of a tender offer if, as a result of the acquisition, the purchaser would become a holder of more than 45% of the voting power of the company. This rule does not apply if someone else already holds a majority of the voting power of the company. These tender offer requirements do not apply to companies whose shares are listed for trading outside of Israel if, under local law or the rules of the stock exchange on which their shares are traded, there is a limitation on the percentage of control which may be acquired or the purchaser is required to make a tender offer to the public.

Under the Companies Law, a person may not acquire shares in a public company if, after the acquisition, he will hold more than 90% of the shares or more than 90% of any class of shares of that company, unless a tender offer is made to purchase all of the shares or all of the shares of the particular class. The Companies Law also provides that as long as a shareholder in a public company holds more than 90% of the company's shares or of a class of shares, that shareholder shall be precluded from purchasing any additional shares. If a tender offer is accepted and less than 5% of the shares of the company are not tendered, all of the shares will transfer to the ownership of the purchaser. If 5% or more of the shares of the company are not tendered, the purchaser may not purchase shares in a manner which will grant him more than 90% of the shares of the company.

In addition, certain provisions of the Memorandum and Articles may have the effect of rendering more difficult or discouraging an acquisition of the Company deemed undesirable by the Board of Directors. Those provisions include: limiting the ability of the Company's shareholders to convene general meetings of the Company (as discussed above); controlling procedures for the conduct of shareholder and Board of Directors meetings, including quorum and voting requirements; and the election and removal of directors.

Moreover, the classification of the Board of Directors into three classes with terms of approximately three years each, which was approved by shareholders of the Company in 2001, and the requirement under Israeli company law to have two external directors, who cannot readily be removed from office, may make it more difficult for shareholders who oppose the policies of the Board of Directors to remove a majority of the then current directors from office quickly. It may also, in some circumstances, together with the other provisions of the Memorandum, Articles and Israeli law, deter or delay potential future merger, acquisition, tender or takeover offers, proxy contests or changes in control or management of the Company, some of which could be deemed by certain shareholders to be in their best interests and which could affect the price some investors are willing to pay for Ordinary Shares.

Israeli tax law treats some acquisitions, including stock-for-stock swaps between an Israeli company and a foreign company, less favorably than U.S. tax law. Israeli tax law may, for instance, subject a shareholder who exchanges Ordinary Shares for shares in a non-Israeli corporation to immediate taxation.

### ***(i) Duration and Liquidation***

The Articles do not limit the Company's duration.

### ***10.C Material Contracts***

In June 2000, the Company entered into an agreement with an affiliate of Jenoptik pursuant to which the Company acquired all of the right, title and interest in and to the DI Joint Venture in consideration for the issuance of 90,000 Ordinary Shares. An additional 67,500 Ordinary Shares

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were issued on March 15, 2002, in consideration for co-operation between Jenoptik and the Company on joint research and development projects. See Item 4 Information on the Company History and Development of the Company Business Overview The Company s Products Bare PCBs.

During January 2001, the Company exercised its option to purchase the remaining equity interest in Orbotech-Schuh, and all rights in certain know-how, for approximately \$13.3 million in return for which the

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remaining 49% equity interest in Orbotech-Schuh and all rights in such know-how were transferred to the Company on January 8, 2001. See Item 4 Information on the Company History and Development of the Company Business Overview The Company's Products Assembled PCBs.

### ***10.D Exchange Controls***

Non-residents of Israel who purchase Ordinary Shares of the Company will be able to convert dividends, if any are declared, and liquidation distributions into freely repatriable non-Israeli currencies at the rate of exchange prevailing at the time of conversion, pursuant to a general permit issued by the Israeli Controller of Foreign Exchange at the Bank of Israel under the Currency Control Law, 1978 (the **Currency Control Law**), provided that Israeli income tax has been paid (or withheld) on such amounts.

Pursuant to a general permit under the Currency Control Law, Israeli residents are generally eligible to purchase Ordinary Shares.

There are no limitations on the Company's ability to import and export capital.

### ***10.E Taxation***

To the extent that the following discussion is based on new or existing tax or other legislation that has not been subject to judicial or administrative interpretation, there can be no assurance that the views expressed herein will be accepted by the tax or other authorities in question. This discussion is not intended, nor should it be construed, as legal or professional tax advice and it is not exhaustive of all possible tax considerations.

#### ***(a) Israeli Taxation***

##### ***(i) Taxation of Capital Gains Applicable to Non-Israeli Shareholders***

Israeli law generally imposes a capital gains tax on the sale of securities and any other capital assets. Effective until December 31, 2002, the basic capital gains tax rate applicable to corporations was 36%, and the maximum tax rate applicable to individuals was 50%. Effective January 1, 2003, the capital gains tax rate imposed upon the sale of capital assets acquired after that date has been reduced to 25%; capital gains accrued from assets acquired before January 1, 2003 are subject to a blended tax rate based on the relative periods of time before and after January 1, 2003 that the asset was held. These rates are subject to the provisions of any applicable bilateral double taxation treaty. The treaty concerning double taxation between the United States and Israel (the Convention between the Government of the State of Israel and the Government of the United States of America With Respect to Taxes on Income (the **Treaty**)) is discussed below.

In addition, if the Ordinary Shares are traded on the Tel Aviv Stock Exchange or on a stock exchange recognized by the Israeli Ministry of Finance, gains on the sale of Ordinary Shares held by non-Israeli tax resident investors will generally be exempt from Israeli capital gains tax. Notwithstanding the foregoing, dealers in securities in Israel are taxed at regular tax rates applicable to business income.

Under an amendment to the Israeli Income Tax (Inflationary Adjustments) Law, 1985, effective January 1, 1999, non-Israeli corporations may, under some circumstances, be subject to Israeli taxes on the sale of listed securities in an Israeli company subject to the provisions of any applicable tax treaty.

*(ii) Income Taxes on Dividend Distribution to Non-Israeli Shareholders*

Individuals who are non-residents of Israel are subject to a graduated income tax on income derived from sources in Israel. These sources of income include passive income, including dividends, royalties and interest, as



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well as non-passive income from services provided in Israel. Upon a distribution of a dividend, other than bonus shares (stock dividends), income tax is generally withheld at the rate of 25% (or 15% in the case of dividends distributed from taxable income derived from an Approved Enterprise), unless a different rate is provided in a treaty between Israel and the shareholder's country of residence. The withheld tax is the final tax in Israel on dividends paid to non-residents who do not conduct a business in Israel. See U.S.-Israel Tax Treaty .

A non-resident of Israel who has dividend income derived from or accrued in Israel, from which tax was withheld at source, is generally exempt from the duty to file tax returns in Israel in respect of such income, provided such income was not derived from a business conducted in Israel by the taxpayer and the non-resident has no other sources of income in Israel.

Residents of the United States generally will have withholding tax in Israel deducted at source. As discussed below, they may be entitled to a credit or deduction for United States federal income tax purposes in the amount of the taxes withheld, subject to detailed rules contained in United States tax legislation.

### *(iii) U.S.-Israel Tax Treaty*

The Treaty is generally effective as of January 1, 1995. Under the Treaty, the maximum Israeli tax and withholding tax on dividends paid to a holder of Ordinary Shares who is a Treaty U.S. Resident (as defined below) is generally 25%. However, pursuant to the Approved Enterprise Law, dividends distributed by an Israeli company and derived from the income of an Approved Enterprise during the applicable benefits period will generally be subject to a reduced 15% dividend withholding tax rate. The Treaty further provides that a 12.5% Israeli dividend withholding tax will apply to dividends paid to a United States corporation owning 10% or more of an Israeli company's voting shares during, in general, the current and preceding tax years of the Israeli company. The lower 12.5% rate applies only on dividends distributed from income not derived from an Approved Enterprise in the applicable period and does not apply if the company has certain amounts of passive income.

Pursuant to the Treaty, the sale, exchange or disposition of Ordinary Shares by a person who qualifies as a resident of the United States within the meaning of the Treaty and who is entitled to claim the benefits afforded to such residents under the Treaty (a **Treaty U.S. Resident**) generally will not be subject to the Israeli capital gains tax unless such Treaty U.S. Resident holds, directly or indirectly, shares representing 10% or more of the voting power of the Company during any part of the 12-month period preceding such sale, exchange or disposition subject to certain conditions. A sale, exchange or disposition of Ordinary Shares by a Treaty U.S. Resident who holds, directly or indirectly, shares representing 10% or more of the voting power of the Company at any time during such preceding 12-month period would not be exempt under the Treaty from such Israeli tax; however, under the Treaty, such Treaty U.S. Resident would be permitted to claim a credit for such taxes against United States federal income tax imposed on any gain from such sale, exchange or disposition, under the circumstances and subject to the limitations specified in the Treaty.

Israel presently has no estate or gift tax.

### *(b) United States Federal Income Tax*

The following general discussion sets forth the material United States federal income tax consequences that are applicable to the following persons who invest in Ordinary Shares and hold such Ordinary Shares as capital assets (**U.S. Shareholders**): (a) individuals who are citizens or residents (as specifically defined for U.S. federal income tax purposes) of the United States; (b) corporations (or entities treated as corporations for U.S. tax purposes) created or organized in the United States or under the laws of the United States or of any state thereof; and (c) estates or

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trusts the income of which is subject to United States federal income taxation regardless of its source. This discussion does not deal with: (i) all aspects of U.S. federal income taxation that may be relevant to particular U.S. Shareholders based on their particular circumstances (including potential application of the

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alternative minimum tax); (ii) certain U.S. Shareholders subject to special treatment under the U.S. federal income tax laws such as broker-dealers, insurance companies, tax-exempt organizations, financial institutions, taxpayers whose functional currency is not the Dollar, or foreign individuals or entities; (iii) U.S. Shareholders owning directly or by attribution 10% or more of the Ordinary Shares; or (iv) any aspect of state, local or non-United States tax laws. Additionally, the following discussion does not consider the tax treatment of persons who hold Ordinary Shares through a partnership or other pass-through entity.

The summary of United States income tax laws set out below is based on the Internal Revenue Code of 1986, as amended, Treasury regulations, judicial decisions and published positions of the Internal Revenue Service (the **IRS**) as of the date hereof and is subject to any changes occurring in the United States law after that date, which changes could be retroactive.

*(i) Dividends Paid on Shares*

Distributions paid on Ordinary Shares (including any Israeli taxes withheld) to a U.S. Shareholder will be treated as ordinary dividend income for United States federal income tax purposes to the extent of the Company's current and accumulated earnings and profits (as computed for U.S. federal income tax purposes). Such dividends, which will be treated as foreign source income for U.S. foreign tax credit purposes, generally will not qualify for the dividends-received deduction available to corporations. Distributions in excess of such earnings and profits will be applied against and will reduce the shareholder's tax basis in the Ordinary Shares and, to the extent in excess of such tax basis, will be treated as gain from a sale or exchange of such Ordinary Shares. The amount of the distribution will equal the Dollar value of the distribution, calculated by reference to the exchange rate in effect on the date the distribution is received (or otherwise made available to the U.S. Shareholders), regardless of whether a payment in Israeli currency is actually converted to Dollars at that time. U.S. Shareholders should consult their own tax advisors concerning the treatment of foreign currency gain or loss, if any, on any Israeli currency received which is converted into Dollars subsequent to receipt.

*(ii) Credit for Israeli Taxes Withheld*

Subject to conditions and limitations, any Israeli tax withheld or paid with respect to dividends on Ordinary Shares generally will be eligible for credit against a U.S. Shareholder's United States federal income tax liability. Such limitations include extensive separate computation rules under which foreign tax credits allowable with respect to specific classes of foreign-source income cannot exceed the United States federal income taxes otherwise payable with respect to each such class of income. Subject to the particular circumstances of the U.S. Shareholder, dividends distributed by the Company with respect to Ordinary Shares will generally be classified as passive income. The availability of the Israeli withholding tax as a foreign tax credit will also be subject to certain restrictions on the use of such credits, including a prohibition on the use of the credit to reduce liability for the United States individual and corporate minimum taxes by more than 90%. Alternatively, a U.S. Shareholder may elect to claim a U.S. tax deduction for such Israeli tax, but only for a year in which a U.S. Shareholder elects to do so with respect to all foreign incomes taxes.

*(iii) Disposition of Ordinary Shares*

A U.S. Shareholder will generally recognize capital gain or loss upon the sale or exchange of Ordinary Shares in an amount equal to the difference between the amount realized and the U.S. Shareholder's tax basis in the Ordinary Shares. Such gain or loss will be long-term capital gain or loss if the U.S. Shareholder's holding period exceeds one year, and otherwise will be short-term capital gain or loss. Certain limitations apply to the deductibility of capital losses by both corporate and non-corporate taxpayers. Gain or loss from the sale, exchange or other disposition of Ordinary Shares will generally be treated as from U.S. sources for U.S. foreign tax credit purposes. However, pursuant to the Treaty, such gain or loss may be foreign source in certain circumstances. See U.S.-Israel Tax Treaty. U.S. Shareholders should consult their own tax advisors regarding the treatment of any foreign currency gain or loss on any Israeli currency received in respect of the sale, exchange or other disposition of Ordinary Shares.



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*(iv) Passive Foreign Investment Company*

A passive foreign investment company ( **PFIC** ) is defined as any foreign corporation at least 75% of whose consolidated gross income for the taxable year is passive income, or at least 50% of the value of whose consolidated assets is attributable to assets that produce or are held for the production of passive income. For this purpose, passive income generally includes dividends, interest, royalties, rents, annuities and the excess of gains over losses from the disposition of assets which produce passive income. The Company believes that it is not and has not been a PFIC for United States federal income tax purposes, and the Company expects that it will not become a PFIC. If the Company were to become a PFIC, then all U.S. Shareholders would be required either: (i) to include in their taxable income certain undistributed amounts of the Company's income if a qualified electing fund election has been made; or (ii) to pay an interest charge together with tax calculated at maximum ordinary income rates on certain excess distributions (defined to include gain on the sale of Ordinary Shares).

*(v) Backup Withholding and Information Reporting*

A non-corporate U.S. Shareholder may, under certain circumstances, be subject to information reporting requirements and backup withholding at a 30% rate on cash payments in the United States of dividends on, and the proceeds of disposition of, Ordinary Shares. Backup withholding will apply only if a U.S. Shareholder: (a) fails to furnish its social security or other taxpayer identification number ( **TIN** ) within a reasonable time after the request therefor; (b) furnishes an incorrect TIN; (c) is notified by the IRS that it has failed properly to report payments of interest and dividends; or (d) under certain circumstances, fails to certify, under penalty of perjury, that it has furnished a correct TIN and has not been notified by the IRS that it is subject to backup withholding for failure to report interest and dividend payments. U.S. Shareholders should consult their tax advisors regarding their qualification for exemption, if applicable. The amount of backup withholding from a payment to a U.S. Shareholder generally will be allowed as a credit against such U.S. Shareholder's federal income tax liability and may entitle such U.S. Shareholder to a refund, provided that the required information is furnished to the IRS.

**10.F Dividends and Paying Agents**

Not applicable in Annual Report on Form 20-F.

**10.G Statements by Experts**

Not applicable in Annual Report on Form 20-F.

**10.H Documents on Display**

The material documents referred to herein to which the Company is a party, to the extent that their disclosure is not otherwise limited or restricted, may, by prior arrangement, be inspected at the offices of the Company in Yavne, Israel. In addition, the Company believes that all publicly filed documents referred to herein should be available for inspection, upon payment of any prescribed fees and otherwise upon such terms and conditions as may be specified, at the respective public archives or institutions with which they are filed.

**10.1 Subsidiary Information**

Not applicable in Annual Report on Form 20-F.

**Item 11 Quantitative and Qualitative Disclosures About Market Risk**

**(a) General**

The Company uses financial instruments and derivatives in order to limit its exposure to risks arising from changes in exchange rates. The use of such instruments does not expose the Company to additional exchange rate risks since the derivatives are held against an asset (for example, excess assets in Euros).

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The Company's derivative transactions in 2002 were executed through Israeli banks and one United Kingdom investment bank. The Company believes that the credit risk of such institutions is minimal.

**(b) Exchange Rate Risk Management**

Since the Company's functional currency and that of its subsidiaries is the Dollar, the Company, including through its subsidiaries, protects itself against exposure arising from the difference between assets and liabilities in each currency other than the Dollar ( **Balance Sheet Exposure** ). The majority of the Balance Sheet Exposure in such subsidiaries is in Japanese Yen, Euros and NIS.

The Company endeavors to limit its exposure through natural hedging, i.e., by attempting to maintain a similar level of assets and liabilities in any given currency. The remaining exposure which is not set off naturally is limited by the use of derivative instruments. To the extent possible, this is also done on a consolidated basis.

The table below details the Balance Sheet Exposure, expressed in currency and geographical terms, as at December 31, 2002 (at fair value as explained below). All data in the table have been converted for convenience into Dollar equivalents (in millions).

	Euro	Japanese Yen	Other Far Eastern Currencies***	New Israeli Shekel	Total
Israel:					
Maturing in 2003				(13.2)	(13.2)
Maturing in 2004 - 2007*				(11.0)	(11.0)
Europe**	12.2				12.2
Japan**		26.3			26.3
Pacific Rim**			8.4		8.4
<b>Total</b>	<b>12.2</b>	<b>26.3</b>	<b>8.4</b>	<b>(24.2)</b>	<b>22.7</b>

\* In equal installments of \$2.8 million in each of the years 2004 - 2007.

\*\* Maturing in 2003.

\*\*\* Includes Korean won, Taiwanese dollar, Singapore dollar and Chinese RMB.

Explanatory notes:

1. Total exposure is the sum of the absolute value figures.

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2. In light of the high degree of correlation among the European currencies, the Company does not differentiate among these currencies when assessing its exposure. Therefore, the data in the column headed Euro (in both the foregoing and the following tables) include exposures in other European currencies.
  
3. The data presented in the table reflect the exposure after taking into account the effect of the natural hedging.

The table below details the hedging acquired in forward exchange contracts in order to limit the Balance Sheet Exposure. The data are as at December 31, 2002 as recorded in the Company's financial records and are presented in Dollar equivalent terms (in millions).

	Korean		Taiwanese	Japanese	New Israeli	Total
	Won	Euro	Dollar	Yen	Shekel	
Israel					(19.7)	(19.7)
Europe		13.1				13.1
Japan				24.0		24.0
Pacific Rim	2.2		4.2			6.4
<b>Total</b>	2.2	13.1	4.2	24.0	(19.7)	23.8



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The Company also acquired forward exchange contracts in order to limit cash flow exposures:

1. Forward transactions are generally limited to three months (see also below).
2. The Company hedged certain Japanese Yen contracts for 2003 in the amount of \$13.5 million.
3. The Company hedged NIS for salary and rental payments for 2003 in the amount of \$18.1 million.

### ***(c) Fair Value of Derivatives***

The fair value of derivatives as of December 31, 2002, constituted an asset and a liability of approximately \$1.0 million and \$0.5 million, respectively. The fair value of the derivatives generally reflects the estimated amounts that the Company would receive or pay upon termination of the contracts at the reporting date.

### ***(d) Interest Rate Risk Management***

Cash and cash equivalents as of December 31, 2002, in the amount of \$96.7 million bore interest at fixed rates of 0.75% - 2.33%. Short-term bank deposits in the amount of \$15.0 million bore interest at a fixed rate of 2.33%. Held-to-maturity marketable securities in the amount of \$38.4 million, with an aggregate fair value of \$39.6 million, consisted mainly of quoted non-Israeli corporate debentures which bore fixed interest rates of 2.22% - 6.99% and matured as follows: \$19.8 million in 2003, \$10.2 million in 2004, \$7.9 in 2005 and \$0.5 million in 2006. Due to the relatively short-term maturities of the Company's cash, deposits and securities portfolio, an immediate 10% change in interest rates is not expected to have a material effect on the Company's near-term financial condition or results of operations.

The Company's long-term liability to the Government of Israel in the amount of \$14.9 million, which is denominated in NIS and linked to the Israeli CPI, bears interest at a fixed rate of 4%. This liability is payable in five installments commencing in 2003. Due to the amount of this long-term liability to the Government of Israel, an immediate 10% change in interest rates is not expected to have a material effect on the Company's near-term financial condition or results of operations.

## **Item 12 Description of Securities Other than Equity Securities**

### ***12.A Debt Securities***

Not applicable in Annual Report on Form 20-F.

***12.B Warrants and Rights***

Not applicable in Annual Report on Form 20-F.

***12.C Other Securities***

Not applicable in Annual Report on Form 20-F.

***12.D American Depositary Shares***

Not applicable in Annual Report on Form 20-F.

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**PART II**

**Item 13** *Defaults, Dividend Arrearages and Delinquencies*

None

**Item 14** *Material Modifications to the Rights of Security Holders and Use of Proceeds*

None

**Item 15** *Controls and Procedures*

As of a date within 90 days prior to the date of this report (the **Evaluation Date**), the Company conducted an evaluation (under the supervision and with the participation of the Company's management, including the chief executive officer and chief financial officer), pursuant to Rule 13a-15 promulgated under the Exchange Act, of the effectiveness of the design and operation of the Company's disclosure controls and procedures. Based on this evaluation, the Company's chief executive officer and chief financial officer concluded that as of the Evaluation Date such disclosure controls and procedures were reasonably designed to ensure that information required to be disclosed by the Company in reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC.

Since the Evaluation Date, there have not been any significant changes in the internal controls or in other factors that could significantly affect the internal controls, nor have there been any corrective actions with regard to significant deficiencies and material weaknesses.

**Item 16A** *Audit Committee Financial Expert*

Not yet applicable to Registrant.

**Item 16B** *Code of Ethics*

Not yet applicable to Registrant.

**Item 16C** *Principal Accountant Fees and Services*

Not yet effective.

**Item 16D** *Exemptions from the Listing Standards for Audit Committees*

Not yet applicable to Registrant.

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The Company is furnishing financial statements pursuant to the instructions of Item 18 of Form 20-F.

**Item 18 *Financial Statements*****18. *Financial Statements***

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All schedules for which provision is made in the applicable accounting regulations of the SEC are either included in the notes to the financial statements or, if not required under the related instructions or inapplicable, have been omitted.

**Item 19 *Exhibits***

- (1.1) Memorandum of Association reflecting amendments integrated into the text.\*
- (1.2) Articles of Association reflecting amendments integrated into the text.\*
- (2.1) Forms of Stock Certificates Representing Ordinary Shares.\*\*
- (2.2) The Orbotech Ltd. Israeli Key Employee Share Incentive Plan (1992) (As Amended, 1994, 1996, 1997, 1998, 1999).\*\*
- (2.3) The 1995 Incentive Stock Plan for Key Employees of Orbotech Ltd. s Subsidiaries (As Amended, 1997, 1998, 1999, 2000, 2001).\*
- (2.4) Employee Share Ownership and Option Plan (2000).\*\*
- (2.5) Letter to the Office of the Chief Scientist at the Ministry of Industry and Trade of the State of Israel from Orbotech Ltd. respecting indebtedness to the Government of Israel.\*\*\*

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- (4.1) Acquisition Agreement made and entered into as of June 19, 2000 by and between Orbotech Ltd., Orbotech S.A., Laser Imaging Systems GmbH & Co. KG, Laser Imaging Systems Verwaltungs-GmbH, Deutsche Effecten-und Wechsel-Beteiligungsgesellschaft AG and Jenoptik AG.\*\*
- (4.2) Share Acquisition Agreement entered into as of June 19, 2000 by and among Orbotech Ltd., Orbotech S.A., Jenoptik AG and Deutsche Effecten-und Wechsel-Beteiligungsgesellschaft AG.\*\*
- (4.3) Agreement made and entered into as of December 17, 2000 by and between Orbotech Ltd., Orbotech S.A., Orbotech Holding GmbH, Orbotech-Schuh GmbH & Co. KG, Orbotech-Schuh Verwaltungs GmbH, Wolfgang Schuh, Hermann Menning, Achim Günther and Dipl.- Ing W. Schuh GmbH & Co. KG.\*\*
- (4.4) Share Acquisition Agreement entered into as of December 31, 2001 by and among Orbotech Ltd., Jenoptik AG and Deutsche Effecten-und Wechsel-Beteiligungsgesellschaft AG.\*
- (4.5) Letter dated January 24, 2002 from Jenoptik AG and Deutsche Effecten-und Wechsel-Beteiligungsgesellschaft AG to Orbotech Ltd. and Orbotech S.A.\*

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(8.1) List of Subsidiaries.

The following are the principal subsidiary entities of Orbotech Ltd.

Orbotech, Inc.

Orbotech S.A.

Laser Imaging Systems GmbH & Co. KG

Orbotech Holding GmbH

Orbotech Schuh GmbH & Co. KG

Orbotech Pacific Ltd.

Orbotech B.V.

Orbotech Asia Ltd.

Orbotech Japan Ltd.

Orbograph Ltd.

Orbotech Technology Ventures Limited Partnership, of which the partners are the Company and Orbotech Technology Ventures Limited.

FrontLine P.C.B. Solutions Ltd. (owned as to 50% by the Company)

FrontLine P.C.B. Solutions Limited Partnership

(12.1) Certification Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

(12.2) Consent of Independent Public Accountants.

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\* Incorporated by reference from the Company's Annual Report on Form 20-F for the year ended December 31, 2001.

\*\* Incorporated by reference from the Company's Annual Report on Form 20-F for the year ended December 31, 2000.

\*\*\* The Company agrees to furnish to the SEC, upon request, a copy of this letter.

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**SIGNATURES**

The Registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this Annual Report on its behalf.

ORBOTECH LTD.

By:           /s/ YOCHAI RICHTER          

Yochai Richter

Chief Executive Officer

Dated: April 30, 2003



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**Certification by Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Yochai Richter, certify that:

1. I have reviewed this Annual Report on Form 20-F of Orbotech Ltd. (the **Registrant** );
2. Based on my knowledge, this Annual Report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this Annual Report;
3. Based on my knowledge, the financial statements, and other financial information included in this Annual Report, fairly present in all material respects the financial condition, results of operations and cash flows of the Registrant as of, and for, the periods presented in this Annual Report;
4. The Registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the Registrant and have:
  - a) designed such disclosure controls and procedures to ensure that material information relating to the Registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this Annual Report is being prepared;
  - b) evaluated the effectiveness of the Registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this Annual Report (the **Evaluation Date** ); and
  - c) presented in this Annual Report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The Registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the Registrant's auditors and the audit committee of Registrant's board of directors (or persons performing the equivalent function):
  - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the Registrant's ability to record, process, summarize and report financial data and have identified for the Registrant's auditors any material weaknesses in internal controls; and
  - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the Registrant's internal controls; and
6. The Registrant's other certifying officers and I have indicated in this Annual Report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

By: /s/ YOCHAI RICHTER

Yochai Richter

Chief Executive Officer

Date: April 30, 2003

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**Certification by Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Amichai Steinberg, certify that:

1. I have reviewed this Annual Report on Form 20-F of Orbotech Ltd. (the **Registrant** );
2. Based on my knowledge, this Annual Report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this Annual Report;
3. Based on my knowledge, the financial statements, and other financial information included in this Annual Report, fairly present in all material respects the financial condition, results of operations and cash flows of the Registrant as of, and for, the periods presented in this Annual Report;
4. The Registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the Registrant and have:
  - a) designed such disclosure controls and procedures to ensure that material information relating to the Registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this Annual Report is being prepared;
  - b) evaluated the effectiveness of the Registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this Annual Report (the **Evaluation Date** ); and
  - c) presented in this Annual Report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The Registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the Registrant's auditors and the audit committee of Registrant's board of directors (or persons performing the equivalent function):
  - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the Registrant's ability to record, process, summarize and report financial data and have identified for the Registrant's auditors any material weaknesses in internal controls; and
  - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the Registrant's internal controls; and
6. The Registrant's other certifying officers and I have indicated in this Annual Report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

By: /s/ AMICHAH STEINBERG

Amichai Steinberg

Corporate Vice President  
for Finance and

Chief Financial Officer

Date: April 30, 2003

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**ORBOTECH LTD.**

**(An Israeli Corporation)**

**2002 CONSOLIDATED FINANCIAL STATEMENTS**

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**ORBOTECH LTD.**

**2002 CONSOLIDATED FINANCIAL STATEMENTS**

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The amounts are stated in U.S. dollars (\$) in thousands.

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**Kesselman & Kesselman**

Certified Public Accountants (Isr.)

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**REPORT OF INDEPENDENT AUDITORS**

To the shareholders of

**ORBOTECH LTD.**

We have audited the consolidated balance sheets of Orbotech Ltd. (the Company) and its subsidiaries as of December 31, 2002 and 2001 and the related consolidated statements of operations, changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2002. These financial statements are the responsibility of the Company's Board of Directors and management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in Israel and in the United States of America, including those prescribed by the Israeli Auditors (Mode of Performance) Regulations, 1973. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the Company's Board of Directors and management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

The Company accounts for the 50%-owned joint venture, Frontline P.C.B. Solutions Limited Partnership, using the proportionate method of consolidation as is permitted under generally accepted accounting principles in Israel. Generally accepted accounting principles in the United States of America require that such joint venture be accounted for using the equity method of accounting. The United States Securities and Exchange Commission stated that it would not object to the Company's use of the proportionate method of consolidation as supplemented by the disclosure in note 3 to the consolidated financial statements.

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In our opinion, except for the use of the proportionate method of consolidation, as discussed in the preceding paragraph, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Company and its subsidiaries as of December 31, 2002 and 2001 and the results of their operations, the changes in shareholders' equity and their cash flows for each of the three years in the period ended December 31, 2002, in conformity with generally accepted accounting principles in the United States of America.

As discussed in note 1 to the consolidated financial statements: (i) during the year ended December 31, 2002 the Company changed the basis of presentation of its financial statements to generally accepted accounting principles in the United States of America; and (ii) effective January 1, 2002 the Company changed its method of accounting for goodwill to conform with Statement of Financial Accounting Standards No. 142, Goodwill and Other Intangible Assets .

Tel Aviv, Israel  
February 6, 2003

KESSELMAN & KESSELMAN  
CERTIFIED PUBLIC ACCOUNTANTS (ISR.)

Kesselman & Kesselman is a member of PricewaterhouseCoopers International Limited, a company limited by guarantee registered in England and Wales.

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**Table of Contents****ORBOTECH LTD.****CONSOLIDATED BALANCE SHEETS**

	December 31	
	2002	2001
U.S. dollars in thousands		
<b>Assets</b>		
<b>CURRENT ASSETS:</b>		
Cash and cash equivalents	96,687	99,899
Marketable securities	19,781	22,336
Short-term bank deposits	15,000	18,492
Accounts receivable:		
Trade	85,705	82,619
Other	18,836	17,410
Deferred income taxes	4,953	3,692
Inventories	68,441	80,062
<b>Total current assets</b>	<b>309,403</b>	<b>324,510</b>
<b>INVESTMENTS AND OTHER NON-CURRENT ASSETS:</b>		
Marketable securities	18,638	25,151
Other long-term investments	7,622	333
Funds in respect of employee rights upon retirement	11,243	10,828
Non-current trade receivables	307	604
Deferred income taxes	1,996	2,209
	39,806	39,125
<b>PROPERTY, PLANT AND EQUIPMENT</b> , net of accumulated depreciation and amortization	<b>21,784</b>	<b>25,244</b>
<b>GOODWILL</b>	<b>9,032</b>	<b>9,032</b>
<b>OTHER INTANGIBLE ASSETS</b> , net of accumulated amortization	<b>7,144</b>	<b>9,714</b>
<b>Total assets</b>	<b>387,169</b>	<b>407,625</b>

/s/ DR. SHLOMO BARAK

**Dr. Shlomo Barak**) **Chairman of the Board**  
) **of Directors**

/s/ YOCHAI RICHTER

**Yochai Richter**) **Chief Executive Officer**  
) **and Director**



**Table of Contents****ORBOTECH LTD.****CONSOLIDATED BALANCE SHEETS (Continued)**

	December 31	
	2002	2001
	U.S. dollars in thousands	
<b>Liabilities and shareholders equity</b>		
<b>CURRENT LIABILITIES:</b>		
Current maturities of long-term liability to the Government of Israel	2,976	2,835
Accounts payable and accruals:		
Trade	15,237	13,776
Other	42,436	51,872
Total current liabilities	60,649	68,483
<b>LIABILITY FOR EMPLOYEE RIGHTS UPON RETIREMENT</b>	19,180	18,835
<b>LONG-TERM LIABILITY TO THE GOVERNMENT OF ISRAEL, net of current maturities</b>	11,906	11,338
<b>COMMITMENTS AND CONTINGENT LIABILITY, see note 8</b>		
Total liabilities	91,735	98,656
<b>SHAREHOLDERS EQUITY:</b>		
Share capital ordinary shares of NIS 0.14 par value ( Ordinary Shares ):		
Authorized 50,000,000 Ordinary Shares;		
Issued and outstanding:		
December 31, 2002 32,454,504 Ordinary Shares;		
December 31, 2001 32,234,560 Ordinary Shares	1,612	1,603
Additional paid-in capital	95,423	93,942
Deferred stock compensation	(471)	(1,350)
Retained earnings	221,101	236,894
Accumulated other comprehensive income	93	204
Less treasury shares, at cost (483,000 Ordinary Shares)	(22,324)	(22,324)
Total shareholders equity	295,434	308,969
Total liabilities and shareholders equity	387,169	407,625

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

**Table of Contents****ORBOTECH LTD.****CONSOLIDATED STATEMENTS OF OPERATIONS**

	<b>Year ended December 31</b>		
	<b>2002</b>	<b>2001</b>	<b>2000</b>
	U.S. dollars in thousands		
	(except per share data)		
<b>REVENUES:</b>			
Sale of products	154,299	226,329	298,418
Services rendered	62,069	75,575	73,923
	<u>216,368</u>	<u>301,904</u>	<u>372,341</u>
<b>COST OF REVENUES:</b>			
Cost of products sold	78,395	97,192	116,296
Cost of services rendered	51,889	65,101	65,943
Write-down of inventories		7,013	
Settlement with the Government of Israel in respect of research and development grants received		14,173	
	<u>130,284</u>	<u>183,479</u>	<u>182,239</u>
<b>GROSS PROFIT</b>	<u>86,084</u>	<u>118,425</u>	<u>190,102</u>
<b>RESEARCH AND DEVELOPMENT COSTS:</b>			
Expenses incurred	44,384	50,047	42,237
Less government participations	2,191		140
<b>NET RESEARCH AND DEVELOPMENT COSTS</b>	<u>42,193</u>	<u>50,047</u>	<u>42,097</u>
<b>SELLING, GENERAL AND ADMINISTRATIVE EXPENSES</b>	<u>50,184</u>	<u>58,612</u>	<u>60,727</u>
<b>AMORTIZATION OF GOODWILL AND OTHER INTANGIBLE ASSETS</b>	<u>2,521</u>	<u>7,291</u>	<u>4,558</u>
<b>RESTRUCTURING COSTS</b>	<u>10,733</u>	<u>6,149</u>	
<b>OPERATING INCOME (LOSS)</b>	<u>(19,547)</u>	<u>(3,674)</u>	<u>82,720</u>
<b>FINANCIAL INCOME net</b>	<u>2,888</u>	<u>4,730</u>	<u>8,005</u>
<b>INCOME (LOSS) BEFORE TAXES ON INCOME</b>	<u>(16,659)</u>	<u>1,056</u>	<u>90,725</u>
<b>TAXES ON INCOME</b>	<u>(1,099)</u>	<u>(975)</u>	<u>10,838</u>
<b>INCOME (LOSS) FROM OPERATIONS OF THE COMPANY AND ITS SUBSIDIARIES AND JOINT VENTURE</b>	<u>(15,560)</u>	<u>2,031</u>	<u>79,887</u>
<b>SHARE IN LOSSES OF AN ASSOCIATED COMPANY</b>	<u>(233)</u>		

<b>MINORITY SHARE IN PROFITS</b>			(814)
<b>NET INCOME (LOSS)</b>	(15,793)	2,031	79,073
<b>EARNINGS (LOSS) PER SHARE:</b>			
Basic	\$ (0.49)	\$ 0.06	\$ 2.51
Diluted	\$ (0.49)	\$ 0.06	\$ 2.40
<b>WEIGHTED AVERAGE NUMBER OF SHARES USED IN COMPUTATION OF EARNINGS (LOSS) PER SHARE IN THOUSANDS:</b>			
Basic	31,972	31,819	31,566
Diluted	31,972	32,871	32,932

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

**Table of Contents****ORBOTECH LTD.****CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS EQUITY**

	Share capital		Additional paid-in capital	Deferred stock compensation	Retained earnings	Accumulated other		Total shareholders equity
	Number of shares	Amount				comprehensive income	Treasury shares	
In thousands	U.S. dollars in thousands							
<b>BALANCE AT JANUARY 1, 2000</b>	31,268	1,211	76,041	(1,347)	155,790			231,695
<b>CHANGES DURING 2000:</b>								
Net income					79,073			79,073
Issuance of share capital as consideration for acquisition of minority rights in a German limited partnership	90	2	*2,130					2,132
Employee stock options exercised and paid	512	10	*5,415					5,425
Allotment of bonus shares		368	(368)					
Acquisition of treasury shares							(22,324)	(22,324)
Deferred compensation relating to options granted to employees and others net			3,281	(3,281)				
Amortization of deferred compensation relating to options granted to employees and others net				2,147				2,147
Tax benefits related to employee and other stock options			1,873					1,873
<b>BALANCE AT DECEMBER 31, 2000</b>	31,870	1,591	88,372	(2,481)	234,863		(22,324)	300,021
<b>CHANGES DURING 2001:</b>								
Net income					2,031			2,031
Gain in respect of derivative instruments designated for cash flow hedge, net of related taxes						204		204
Total comprehensive income								2,235
Shares to be issued as consideration for co-operation on joint research and development Projects			*1,236					1,236
Employee stock options exercised and paid	364	12	*3,552					3,564

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Deferred compensation relating to options granted to employees and others net			407	(407)				
Amortization of deferred compensation relating to options granted to employees and others net					1,538			1,538
Tax benefits relating to employee and other stock options			375					375
<b>BALANCE AT DECEMBER 31, 2001</b>	32,234	1,603	93,942	(1,350)	236,894	204	(22,324)	308,969
<b>CHANGES DURING 2002:</b>								
Net loss					(15,793)			(15,793)
Loss in respect of derivative instruments designated for cash flow hedge, net of related taxes						(111)		(111)
Total comprehensive loss								(15,904)
Employee stock options exercised and paid	153	7	*1,788					1,795
Shares issued as consideration for co-operation on joint research and development projects	68	2	(2)					
Decrease in deferred compensation relating to options granted to employees and others as a result of forfeiting of options net			(425)	425				
Amortization of deferred compensation relating to options granted to employees and others net					454			454
Tax benefits relating to employee and other stock options			120					120
<b>BALANCE AT DECEMBER 31, 2002</b>	32,455	1,612	95,423	(471)	221,101	93	(22,324)	295,434

\* Net of share issuance costs.

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

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(Continued) 1

**ORBOTECH LTD.****CONSOLIDATED STATEMENTS OF CASH FLOWS**

	<b>Year ended December 31</b>		
	<b>2002</b>	<b>2001</b>	<b>2000</b>
<b>U.S. dollars in thousands</b>			
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>			
Net income (loss)	(15,793)	2,031	79,073
Adjustments to reconcile net income or loss to net cash provided by or used in operating activities:			
Depreciation and amortization	10,100	14,581	11,258
Amortization of deferred compensation relating to options granted to employees and others	454	1,538	2,147
Trading marketable securities net	6,991	(2,976)	(3,917)
Liability for employee rights upon retirement	345	1,106	3,762
Loss (gains) on amounts funded in respect of employee rights upon retirement	4	(26)	(11)
Share in losses of an associated company	233		
Minority share in profits			814
Capital loss (gain) from disposal of property, plant and equipment	6	(40)	(48)
Deferred income taxes	(1,048)	(5,335)	506
Royalties in respect of a settlement with the Government of Israel		14,173	
Exchange differences on long-term liability to the Government of Israel	709		
Shares to be issued as consideration for co-operation on joint research and development projects		1,236	
Provision for restructuring expenses and non-cash expenses in respect of restructuring	5,181	2,617	
Changes in operating assets and liabilities:			
Decrease (increase) in accounts receivable:			
Trade (including non-current portion)	(2,789)	3,338	(14,791)
Other	(1,825)	(351)	(3,677)
Increase (decrease) in accounts payable and accruals:			
Trade	1,461	(18,725)	16,030
Other	(13,854)	(18,548)	19,945
Decrease (increase) in inventories	11,621	3,996	(25,882)
Tax benefits relating to employee stock options	120	375	1,873
	<u>1,916</u>	<u>(1,010)</u>	<u>87,082</u>
Net cash provided by (used in) operating activities			
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>			
Purchase of property, plant and equipment	(4,591)	(9,304)	(11,209)
Acquisition of minority rights in a German limited partnership and related intellectual property		(14,137)	
Bank deposits net	3,492	(16,492)	(1,700)
Acquisition of marketable securities held-to-maturity	(24,313)	(42,788)	(43,798)
Other investments	(7,522)	(333)	
Acquisition of other intangible assets		(3,092)	
Redemption of marketable securities held-to-maturity	26,390	48,851	26,237
Proceeds from disposal of property, plant and equipment	40	454	327
Funds in respect of employee rights upon retirement	(419)	(1,287)	(2,056)
	<u>(6,923)</u>	<u>(38,128)</u>	<u>(32,199)</u>
Net cash used in investing activities			
Subtotal forward	(5,007)	(39,138)	54,883





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**ORBOTECH LTD.****CONSOLIDATED STATEMENTS OF CASH FLOWS**

	<b>Year ended December 31</b>		
	<b>2002</b>	<b>2001</b>	<b>2000</b>
	<b>U.S. dollars in thousands</b>		
Subtotal brought forward	(5,007)	(39,138)	54,883
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>			
Employee stock options exercised and paid	1,795	3,564	5,425
Repayment of long-term bank loans		(723)	(1,074)
Acquisition of treasury shares			(22,324)
Net cash provided by (used in) financing activities	1,795	2,841	(17,973)
<b>NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<b>(3,212)</b>	<b>(36,297)</b>	<b>36,910</b>
<b>BALANCE OF CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR</b>	<b>99,899</b>	<b>136,196</b>	<b>99,286</b>
<b>BALANCE OF CASH AND CASH EQUIVALENTS AT END OF YEAR</b>	<b>96,687</b>	<b>99,899</b>	<b>136,196</b>
<b>SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION</b> cash paid during the year for:			
Interest	458	467	394
Income taxes	3,175	4,407	6,808

**SUPPLEMENTARY INFORMATION ON INVESTING ACTIVITIES NOT INVOLVING CASH FLOWS**

In June 2000, the Company acquired all the minority rights in a German limited partnership in exchange for Ordinary Shares of the Company.

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

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**NOTE 1 SIGNIFICANT ACCOUNTING POLICIES:**

**a. General:**

*1) Nature of operations*

Orbotech Ltd. (the Company) is an Israeli corporation, which, together with its subsidiaries and a joint venture, is principally engaged in the design, development, manufacture, marketing and/or service of yield-enhancing, production support solutions for specialized applications in the supply chain of the electronics industry. The Company's products include automated optical inspection (AOI) and process control systems and computer aided manufacturing (CAM) and imaging solutions, principally for application in the production of printed circuit boards (PCBs) and flat panel displays (FPDs).

Through its subsidiary, Orbograph Ltd., the Company also develops and markets automatic check reading software to banks and other check processing organizations.

As to the Company's operating segments and principal markets, see note 14a.

*2) Accounting principles*

The consolidated financial statements for all years presented are prepared in accordance with generally accepted accounting principles (GAAP) in the United States of America, except for the use of the proportionate method of consolidation, as discussed in b. below. Prior to 2002, the consolidated financial statements were prepared in accordance with Israeli GAAP with a reconciliation to U.S. GAAP.

*3) Use of estimates in the preparation of financial statements*

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions which affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting years. Actual results could differ from those estimates.

*4) Functional currency*

The currency of the primary economic environment in which the operations of the Company and its subsidiaries and joint venture are conducted is the U.S. dollar (the dollar).

Virtually all sales by the Company and its subsidiaries and joint venture are made outside Israel in non-Israeli currencies, mainly the dollar (see note 14a regarding geographical information). Most purchases of materials and components are made in dollars or in Israeli currency under contracts linked to the dollar. In addition, most marketing and service costs are incurred outside Israel, primarily in dollars, through the Company's wholly-owned non-Israeli subsidiaries. Thus, the functional currency of the Company and its subsidiaries and joint venture is the dollar.

Transactions and balances originally denominated in dollars are presented at their original amounts. Balances in non-dollar currencies are translated into dollars using historical and current exchange rates for non-monetary and monetary balances, respectively. For non-dollar transactions and other items (stated below) reflected in the statements of operations, the following exchange rates are used: (i) for transactions: exchange rates at transaction dates or average rates; and (ii) for other items (derived from non-monetary balance sheet items such as depreciation and amortization, changes in inventories, etc.): historical exchange rates. The resulting currency transaction gains or losses are carried to financial income or expenses, as appropriate.

**b. Principles of consolidation**

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries.

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

In addition, the Company accounts for the 50%-owned joint venture, Frontline P.C.B. Solutions Limited Partnership, using the proportionate method of consolidation as is permitted under Israeli GAAP. U.S. GAAP requires that such joint venture be accounted for using the equity method of accounting. The United States Securities and Exchange Commission stated that it would not object to the Company's use of the proportionate method of consolidation, provided that the joint venture is an operating entity the significant financial and operating policies of which are, by contractual agreement, jointly controlled by all parties having an equity interest in the entity, and provided further that summarized financial data relating to the joint venture are provided. These data are presented in note 3.

These subsidiaries and joint venture are collectively referred to in these financial statements as subsidiaries .

Intercompany balances and transactions have been eliminated in consolidation. Profits from intercompany sales, not yet realized outside of the Company and its subsidiaries, have also been eliminated.

**c. Cash equivalents**

The Company considers all highly liquid investments, which include short-term bank deposits (up to three months from the date of deposit) that are not restricted as to withdrawal or use, and short-term Israeli Government bonds, the period to maturity of which does not exceed three months at the time of investment, to be cash equivalents.

**d. Concentration of credit risks and allowance for doubtful accounts**

As of December 31, 2002 and 2001, the Company held cash and cash equivalents and short-term bank deposits, most of which were deposited with major Israeli, European and U.S. banks. The marketable securities held by the Company are mainly corporate debentures. The Company is of the opinion that the credit risk in respect of these balances is insignificant.

The Company's revenues are derived from a large number of customers. Consequently, the exposure to concentration of credit risks relating to individual customers is limited. The Company performs ongoing credit evaluations of its customers for the purpose of determining the appropriate allowance for doubtful accounts. In respect of sales to customers in emerging economies, the Company requires letters of credit from banks.

The allowance for doubtful accounts is determined for specific debts doubtful of collection.

The Company factors certain letters of credit and promissory notes resulting from sales of products. The factoring is carried out through banks, partially on a recourse basis. The transfer of the letters of credit and promissory notes is recorded by the Company as a sales transaction under the provisions of Statement of Financial Accounting Standards ( FAS ) No. 140 of the Financial Accounting Standards Board of the United States ( FASB ), Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities . The resulting costs are charged to financial income net , as incurred.

**e. Inventories**

Inventories are valued at the lower of cost or market. Cost is determined as follows: components on the moving average basis; labor and overhead on the basis of actual manufacturing costs.

Inventories are written-down for estimated obsolescence, based on assumptions about future demand and market conditions. In the year ended December 31, 2001 the Company recorded a write-down, see note 4.

**Table of Contents****ORBOTECH LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****f. Marketable securities**

Quoted non-Israeli corporate debentures and U.S. Treasury notes which the Company intends to hold to maturity are stated at amortized cost.

Asset backed securities are classified as trading securities and are stated at market value.

**g. Other investments**

A company controlled to the extent of 20% or more which is not a subsidiary ( associated company ) is accounted for by the equity method. Other non-marketable investments in three start-up companies are carried at cost.

**h. Property, plant and equipment**

These assets are stated at cost and are depreciated by the straight-line method over their estimated useful lives.

Annual rates of depreciation are as follows:

	<u>%</u>
Machinery and equipment	10-20
	(mainly 20)
Building	3
Office furniture and equipment	6-33
Vehicles	15; 20



Leasehold improvements are amortized by the straight-line method over the term of the lease, or the estimated useful life of the improvements, whichever is shorter.

**i. Goodwill**

On January 1, 2002, the Company adopted FAS No. 142, *Goodwill and Other Intangible Assets*. FAS 142 supersedes Accounting Principles Board Opinion ( APB ) No. 17, *Intangible Assets*. Among the most significant changes made by FAS 142 are: (i) goodwill and intangible assets with indefinite lives will no longer be amortized; and (ii) goodwill and intangible assets deemed to have an indefinite life will be tested for impairment at least annually.

Prior to January 1, 2002, goodwill was amortized over periods of five or ten years.

The Company has identified its various reporting units, which consist of its operating segments, and has allocated the goodwill to the Production Support Solutions for the Electronics Industry segment. The Company has utilized expected future discounted cash flows to determine the fair value of the reporting units and whether any impairment of goodwill existed as of the date of adoption of FAS 142.

As a result of the application of the transitional impairment test, the Company does not have to record a cumulative effect of accounting change for the estimated impairment of goodwill.

**Table of Contents****ORBOTECH LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The Company has designated September 30 of each year as the date on which it will perform its annual goodwill impairment test. No impairment resulted from the annual review performed in the year ended December 31, 2002.

The following table illustrates the Company's results adjusted to eliminate the effect of goodwill amortization expense for the following years:

	Year ended December 31		
	2002	2001	2000
\$ in thousands (except per share data)			
Net income (loss), as reported	(15,793)	2,031	79,073
Add back goodwill amortization		5,017	3,860
Adjusted net income (loss)	(15,793)	7,048	82,933
Earnings (loss) per share:			
Basic as reported	\$ (0.49)	\$ 0.06	\$ 2.51
Basic adjusted	\$ (0.49)	\$ 0.22	\$ 2.63
Diluted as reported	\$ (0.49)	\$ 0.06	\$ 2.40
Diluted adjusted	\$ (0.49)	\$ 0.21	\$ 2.52

**j. Other intangible assets**

Other intangible assets consist primarily of intellectual property and are being amortized mainly over five years.

**k. Impairment of long-lived assets**

In 2002, the Company adopted FAS No.144, *Accounting for the Impairment or Disposal of Long-Lived Assets*. FAS 144 requires that long-lived assets held and used by an entity be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. Under FAS 144, if the sum of the expected future cash flows (undiscounted and without interest charges) of the long-lived assets is less than the carrying amount of such assets, an impairment loss would be recognized, and the assets would be written down to their estimated fair values.

The adoption of FAS 144 did not have any material impact on the financial position and results of operations of the Company.

**I. Recognition of revenue**

The Company recognizes revenue from sale of products to end users upon delivery, provided that appropriate signed documentation of the arrangement, such as a signed contract, purchase order or letter of agreement, has been received, the fee is fixed or determinable and collectibility is reasonably assured. The Company does not, in the normal course of business, provide a right of return to its customers.

Installation and training is not essential to the product capabilities as it does not require specialized skills and can be performed by other vendors.

The Company grants its customers a warranty on products sold usually for a period of six to twelve months. Upon revenue recognition, the Company defers a portion of the sale price and recognizes it as service revenue ratably over the warranty period.

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

Service revenue in respect of the Company's products is recognized ratably over the contractual period or as services are performed.

The Company recognizes revenue from sale of software to end users upon delivery, provided that appropriate signed documentation of the arrangement, such as a signed contract, purchase order or letter of agreement, has been received, the fee is fixed or determinable, and collectibility is probable. When software is made available to customers electronically, it is deemed to have been delivered when the Company has provided the customer with the access codes necessary to enable immediate possession of the software. If collectibility is not considered probable, revenue is recognized when the fee is collected.

Maintenance revenues are comprised of revenue from support arrangements which include technical support and the right to unspecified upgrades on an if-and-when-available basis. Revenues from these services are deferred and recognized on a straight-line basis, over the life of the related agreement, which is typically one year.

**m. Research and development**

Research and development expenses are charged to income as incurred. Government funding for development of approved projects is recognized as a reduction of expenses as the related cost is incurred.

**n. Advertising expenses**

These expenses are charged to income as incurred. Advertising expenses totaled \$ 191,000, \$ 432,000 and \$ 717,000 in the years ended December 31, 2002, 2001 and 2000, respectively.

**o. Deferred income taxes:**

- 1) Deferred income taxes are determined utilizing the asset and liability method based on the estimated future tax effects of differences between the financial accounting and tax bases of assets and liabilities under the applicable tax laws. Deferred income tax provisions and benefits are based on the changes in the deferred tax asset or tax liability from period to period. Valuation allowance is included in respect of deferred tax assets when it is considered more likely than not that such assets will not be realized.

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- 2) The Company may incur additional tax liability in the event of intercompany dividend distributions by its subsidiaries. Such additional tax liability in respect of non-Israeli subsidiaries has not been provided for in these financial statements, as the Company does not expect these subsidiaries to distribute dividends in the foreseeable future.
- 3) Taxes which would apply in the event of disposal of investments in non-Israeli subsidiaries have not been taken into account in computing the deferred taxes, as it is the Company's intention to hold, and not to realize, these investments.
- 4) The Company intends permanently to reinvest the amounts of tax-exempt income of its approved enterprises and does not intend to cause dividend distribution from such income (see also note 10a). Therefore, no deferred taxes have been provided in respect of such tax-exempt income.

### **p. Treasury shares**

Treasury shares are presented as a reduction of shareholders' equity, at their cost to the Company.

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**q. Derivative financial instruments**

The Company enters into forward exchange contracts and purchases and writes currency options to hedge existing non-dollar assets and liabilities as well as certain anticipated transactions which are probable and which are expected to be denominated in non-dollar currencies. The writing of such options is part of a comprehensive hedging strategy and is designed effectively to swap the currencies relating to existing assets and liabilities. Each of the options written is combined with the purchase of an option for the same period and the same notional amount. The Company does not hold or issue derivative financial instruments for trading purposes.

The Company adopted FAS No. 133, *Accounting for Derivative Instruments and Hedging Activities*, as of January 1, 2001. FAS 133, as amended, establishes accounting and reporting standards for derivatives, including certain derivatives embedded in other contracts, and for hedging activities. Under FAS 133, all derivatives are recognized on the balance sheet at their fair value. On the date that the Company enters into a derivative contract, it designates the derivative, for accounting purposes, as either a hedging instrument or a non-hedging instrument.

For derivative financial instruments that are designated and qualify as a cash flow hedge, the effective portions of changes in fair value of the derivative are recorded in other comprehensive income under *gains (losses)* in respect of derivative instruments designated for cash flow hedge, net of related taxes and are recognized in the statement of operations when the hedged item affects earnings. Ineffective portions of changes in the fair value of cash flow hedges are recognized immediately in the statement of operations among *financial income net*. Changes in the fair value of derivatives that do not qualify for hedge accounting are recognized in the statement of operations among *financial income net*.

Cash flows from derivatives are recognized in the statement of cash flows in the same category as that of the hedged item.

Prior to the adoption of FAS 133, foreign currency derivatives were treated and qualified as a hedge if: (i) the item to be hedged exposed the Company to a risk; (ii) the related derivative reduced that exposure and was inversely correlated to the hedged item; and (iii) the derivative was designated at inception for hedging purposes.

Gains and losses on derivatives that hedged existing assets or liabilities were recognized in income commensurate with the results from those assets or liabilities. Gains and losses related to derivatives that hedged anticipated transactions were deferred, and ultimately recognized in income as part of the measurement of the results of the underlying hedged transactions. The net premiums paid for currency options were charged to financial expenses over the terms of the options.

**r. Stock-based compensation**

Stock options granted to employees are accounted for under the recognition and measurement principles of APB No. 25, *Accounting for Stock Issued to Employees*, and related interpretations. Under APB 25, compensation cost for employee stock option plans is measured using the intrinsic value based method of accounting.

Accordingly, the difference, if any, between the quoted market price of the Ordinary Shares on the date of grant of the options and the exercise price of such options is charged on the date of grant to shareholders' equity under deferred stock compensation, and thereafter amortized by the straight-line basis, against income, over the expected service periods (up to four years).

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The following table illustrates the effect on net income (loss) and earnings (loss) per share assuming the Company had applied the fair value recognition provisions of FAS No. 123, *Accounting for Stock-Based Compensation*, to its stock-based employee compensation:

	Year ended December 31		
	2002	2001	2000
	\$ in thousands (except per share data)		
Net income (loss), as reported	(15,793)	2,031	79,073
Add stock-based employee compensation expense, included in reported net income (loss), net of related tax effect	387	1,307	1,825
Deduct stock-based employee compensation expense determined under fair value method, net of related tax effect	(21,072)	(22,078)	(10,671)
<b>Pro forma net income (loss)</b>	<b>(36,478)</b>	<b>(18,740)</b>	<b>70,227</b>
<b>Earnings (loss) per share:</b>			
Basic as reported	\$ (0.49)	\$ 0.06	\$ 2.51
Basic pro forma	\$ (1.14)	\$ (0.59)	\$ 2.22
Diluted as reported	\$ (0.49)	\$ 0.06	\$ 2.40
Diluted pro forma	\$ (1.14)	\$ (0.59)	\$ 2.13

Stock options granted to non-employees (namely, employees of the 50%-owned joint venture and consultants) are accounted for under the provisions of FAS 123 and Emerging Issues Task Force ( EITF ) Issue No. 96-18, *Accounting for Equity Instruments that are Issued to Other than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*. The fair value of such options is charged to income over the expected service period.

As to information about the stock option plans and assumptions used in calculating the pro forma information, see note 9b.

**s. Comprehensive income or loss**

In addition to net income or loss, other comprehensive income or loss includes gains or losses in respect of derivative instruments designated for cash flow hedge, see q. above.



**t. Earnings (loss) per share ( EPS )**

Basic EPS are computed based on the weighted average number of shares outstanding during each year (net of treasury shares), after giving retroactive effect to the bonus share issuance in 2000. In computing diluted EPS, the potential dilutive effect of outstanding stock options was taken into account using the treasury stock method. In the year ended December 31, 2002 stock options were not taken into account, since their effect is anti-dilutive.

**u. Recently issued accounting pronouncements:**

*1) FAS 145*

In April 2002, the FASB issued FAS No. 145, Revision of FASB Statements No. 4, 44 and 64, Amendment of FASB Statement No. 13, and Technical Connections . Among other amendments and rescissions, FAS 145 eliminates the requirement that gains and losses from the extinguishments of debt be aggregated and, if material,

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

classified as an extraordinary item, net of the related income tax effect, unless such gains and losses meet the criteria in paragraph 20 of APB No. 30, Reporting the Results of Operation Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions . FAS 145 is partially effective for transactions occurring after May 15, 2002 and partially effective for fiscal years beginning after May 15, 2002.

The Company does not expect the adoption of FAS 145 to have a material effect on its consolidated financial statements.

2) *FAS 146*

In June 2002, the FASB issued FAS No. 146, Accounting for Costs Associated with Exit or Disposal Activities . FAS 146 addresses financial accounting and reporting for costs associated with exit or disposal activities and rescinds 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) . FAS 146 requires that a liability for a cost associated with an exit or disposal activity be recognized when the liability is incurred. Under EITF 94-3, a liability for an exit cost as generally defined in EITF 94-3 was recognized at the date of the commitment to an exit plan. FAS 146 states that a commitment to a plan does not, in and on itself, create an obligation meeting the definition of a liability. Therefore, FAS 146 eliminates the definition and requirements for recognition of exit costs in EITF 94-3. It also establishes that fair value is the objective for initial measurement of the liability. FAS 146 is to be applied prospectively to exit or disposal activities initiated after December 31, 2002.

The Company does not expect the adoption of FAS 146 to have a material effect on its consolidated financial statements.

3) *FAS 148*

In December 2002, the FASB issued FAS No. 148, Accounting for Stock-Based Compensation Transition and Disclosure an amendment of FASB Statement No. 123 . FAS 148 amends FAS 123 to provide alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. In addition, FAS 148 amends the disclosure requirements of FAS 123 to require prominent disclosures in the financial statements about the method of accounting for stock-based employee compensation and the effect of the method used on reported results. The transition guidance and annual disclosure provisions of FAS 148 are effective for financial statements issued for fiscal years ending after December 15, 2002.

The Company has elected to continue accounting for employee stock based compensation in accordance with APB 25 and related interpretations and has applied the disclosure provisions in FAS 148 in these consolidated financial statements.

4) *FIN 45*

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In November 2002, the FASB issued FASB Interpretation ( FIN ) No. 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 elaborates on the disclosures to be made by a guarantor in its financial statements about its obligations under certain guarantees that it has issued and which are to be made in respect of product warranties. Disclosures required under FIN 45 are already included in these financial statements; however, the initial recognition and measurement provisions of FIN 45 are applicable on a prospective basis to guarantees issued or modified after December 31, 2002.

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The Company does not expect the adoption of FIN 45 to have a material effect on its consolidated financial statements.

5) *FIN 46*

In January 2003, the FASB issued FIN No. 46, *Consolidation of Variable Interest Entities*. Under FIN 46 entities are separated into two categories: (i) those for which voting interests are used to determine consolidation (this is the most common situation); and (ii) those for which variable interests are used to determine consolidation. FIN 46 explains how to identify Variable Interest Entities ( *VIE* ) and how to determine when a business enterprise should include the assets, liabilities, non-controlling interests and results of activities of a *VIE* in its consolidated financial statements.

FIN 46 is effective as follows: for variable interests in *VIEs* created after January 31, 2003, FIN 46 shall apply immediately, for variable interests in *VIEs* created before that date, FIN 46 shall apply in the case of publicly traded entities as of the beginning of the first interim or annual reporting period beginning after June 15, 2003.

The Company does not expect the adoption of FIN 46 to have a material effect on its consolidated financial statements.

6) *EITF 00-21*

In November 2002, the EITF reached a consensus on EITF Issue No. 00-21, *Accounting for Revenue Arrangements with Multiple Deliverables*. EITF 00-21 sets out criteria for whether revenue on a deliverable can be recognized separately from other deliverables in a multiple deliverable arrangement. The criteria consider whether the delivered item has stand-alone value to the customer, whether the fair value of the delivered item can be reliably determined and the rights of returns for the delivered item. EITF 00-21 is required to be adopted by the Company beginning January 1, 2004.

The Company will assess the impact of EITF 00-21 on its consolidated financial position and results of operations.

**NOTE 2 CERTAIN TRANSACTIONS:**

**a.**

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In 1996, the Company entered into an agreement with a German corporation to establish a private German limited partnership, 66.7% owned by the Company, to develop direct imaging technologies (the "DI Joint Venture").

In June 2000, the Company and the German corporation entered into an agreement pursuant to which the Company acquired the German corporation's right, title and interest in and to the DI Joint Venture in consideration for the issuance of 90,000 Ordinary Shares to the German corporation. The purchase price of \$ 2.1 million was based on an average market price of the Company's Ordinary Shares a few days before and after the announcement of the transaction and was attributed to goodwill.

In October 2001, the Company and the German corporation reached a new agreement pursuant to which, on March 15, 2002, 67,500 Ordinary Shares were issued to the German corporation, in consideration for its co-operation with the Company on joint research and development projects. Research and development expenses for the year ended December 31, 2001 include approximately \$ 1.2 million, which represent the fair value, in October 2001, of the 67,500 Ordinary Shares.

**Table of Contents****ORBOTECH LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

- b. In 1997, the Company commenced the design, development, manufacture, marketing and service of AOI systems for assembled PCBs through a German limited partnership, Orbotech Schuh GmbH & Co. KG ( Orbotech-Schuh ), originally owned 51% by the Company, which acquired the AOI activity of a German private limited partnership then engaged in the manufacture of AOI systems for assembled PCBs. At that time the Company received an option to purchase the remaining 49% equity interest in Orbotech-Schuh as well as certain related intellectual property. The Company exercised this option during January 2001 for approximately \$ 13.3 million.

The acquisition resulting from the exercise of the option was accounted for by the purchase method. The amount paid for the intellectual property was \$ 6.7 million and the amount paid for the remaining 49% equity interest in Orbotech-Schuh was \$ 6.6 million. The Company has allocated the excess of the purchase price (\$ 6.6 million) over the fair value of the net tangible assets acquired in the amount of \$ 5.8 million, to goodwill.

- c. In March 2001, the Company acquired certain inspection-related intellectual property for approximately \$ 2.5 million.

**NOTE 3 PROPORTIONATE CONSOLIDATED COMPANY**

The joint venture, FrontLine P.C.B. Solutions Limited Partnership ( FrontLine ), a limited Israeli partnership, is owned equally by the Company and Valor Computerized Systems Ltd. ( Valor ) and combines the former CAM operations of the Company and Valor.

The Company's interest in FrontLine is presented in the consolidated financial statements by the proportionate method of consolidation (see note 1b). As a result, the consolidated balance sheets as of December 31, 2002 and 2001 and the consolidated statements of operations for each of the three years in the period ended December 31, 2002 reflect the assets, liabilities and operating result components of FrontLine on the basis of the Company's percentage of holding.

The following FrontLine data are reflected in the Company's consolidated financial statements on the basis of the Company's percentage of holding:

<b>December 31</b>	
<b>2002</b>	<b>2001</b>
<b>\$ in thousands</b>	

1) Balance sheet data:

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Assets:

Current assets	1,564	2,082
Property, plant and equipment net	438	580
Other non current assets net	575	697
	<u>2,577</u>	<u>3,359</u>

Liabilities:

Current liabilities	322	549
Liability for employee rights upon retirement	433	406
	<u>755</u>	<u>955</u>

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**Table of Contents****ORBOTECH LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

	Year ended December 31		
	2002	2001	2000
	\$ in thousands		
2) Operating results data:			
Revenues:			
Sales of products	5,645	6,341	7,439
Services rendered	4,149	2,423	2,384
Cost of revenues:			
Cost of products sold	(162)	(95)	(128)
Cost of services rendered	(1,449)		
Research and development costs	(2,117)	(2,343)	(1,688)
Selling, general and administrative expenses	(2,889)	(1,140)	(1,192)
Restructuring costs	(243)	(35)	
Financial income (expenses) net	9	2	(64)
Taxes on income	(6)	(10)	
Net income	<u>2,937</u>	<u>5,143</u>	<u>6,751</u>
3) Cash flow data:			
Net cash provided by operating activities	<u>3,926</u>	<u>6,270</u>	<u>1,603</u>
Net cash used in financing activities	<u>(8)</u>	<u>(2)</u>	
Net cash used in investing activities	<u>(53)</u>	<u>(891)</u>	<u>(103)</u>

The Company's wholly-owned subsidiaries market and provide customer support in respect of FrontLine's products.

As to stock options granted to FrontLine's employees, see note 9b(3).

**NOTE 4 INVENTORIES:**



	December 31	
	2002	2001
	\$ in thousands	
Components:		
For manufacturing of systems*	31,796	36,553
For servicing of systems	15,299	18,570
	47,095	55,123
Work in process	4,094	7,588
Finished products	17,252	17,351
	68,441	80,062

\* In the year ended December 31, 2001, the Company recorded a write-down in the amount of \$ 7,013,000.

**Table of Contents****ORBOTECH LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****NOTE 5 PROPERTY, PLANT AND EQUIPMENT:**

- a. Composition of assets, grouped by major classifications, is as follows:

	December 31	
	2002	2001
	\$ in thousands	
Machinery and equipment	24,492	23,143
Leasehold improvements	24,233	21,867
Building	987	987
Office furniture and equipment	22,128	22,555
Vehicles	1,330	1,412
	73,170	69,964
Less accumulated depreciation and amortization	51,386	44,720
	21,784	25,244

- b. Depreciation and amortization expenses totaled \$ 7,579,000, \$ 7,290,000 and \$ 6,700,000 in the years ended December 31, 2002, 2001 and 2000, respectively.

The amounts for the years ended December 31, 2002 and 2001 do not include impairment charges of \$ 475,000 and \$ 387,000, respectively, in respect of leasehold improvements made in connection with the restructuring plans, see note 14c.

**NOTE 6 OTHER INTANGIBLE ASSETS:**

- a. The amortized balance of other identifiable intangible assets mainly intellectual property is composed as follows:

December 31

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	2002	2001
	\$ in thousands	
Original amount	12,786	12,786
Less accumulated amortization	5,642	3,072
	<u>7,144</u>	<u>9,714</u>

- b. Amortization expenses totaled \$ 2,521,000, \$ 2,274,000 and \$ 698,000 in the years ended December 31, 2002, 2001 and 2000, respectively.

Estimated amortization expense for the four years subsequent to 2002 are as follows:

	\$ in thousands
Year ending December 31:	
2003	2,521
2004	2,385
2005	2,069
2006	130

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**NOTE 7 LIABILITY FOR EMPLOYEE RIGHTS UPON RETIREMENT:**

- a. Israeli law generally requires the payment of severance pay upon dismissal of an employee or upon termination of employment in certain other circumstances. The severance pay liability of the Company and its Israeli subsidiaries to their Israeli employees, based upon the number of years of service and the latest monthly salary, is partly covered by regular deposits with recognized pension funds, deposits with severance pay funds and purchases of insurance policies. Under labor agreements, these deposits and insurance policies are in the employees' names and are, subject to certain limitations, the property of the employees.

The severance pay liability covered by the pension funds is not reflected in the financial statements as the severance pay risks have been irrevocably transferred to the pension funds.

The liability for employee rights upon retirement covers the severance pay liability of the Company and its Israeli and Japanese subsidiaries in accordance with labor agreements in force and based on salary components, which, in management's opinion, create entitlement to severance pay. The Company records the obligation as if it was payable at each balance sheet date on an undiscounted basis.

The Company and its Israeli subsidiaries may only make withdrawals from the funds for the purpose of paying severance pay.

- b. Most of the Company's non-Israeli subsidiaries provide defined contribution plans for the benefit of their employees. Under these plans, contributions are based on specific percentages of pay.
- c. Severance pay expenses were \$ 3,745,000, \$ 3,869,000 and \$ 2,553,000 in the years ended December 31, 2002, 2001 and 2000, respectively. In the years ended December 31, 2002 and 2001, additional amounts of \$ 8,152,000 and \$ 4,397,000, respectively, were included in restructuring costs, see note 14c.

Defined contribution plan expenses were \$ 143,000, \$ 152,000 and \$ 90,000 in the years ended December 31, 2002, 2001 and 2000, respectively.

- d. The earnings (losses) on the amounts funded were \$ (4,000), \$ 26,000 and \$ 11,000 in the years ended December 31, 2002, 2001 and 2000, respectively.

**NOTE 8 COMMITMENTS, CONTINGENT LIABILITY AND RESTRICTION PLACED IN RESPECT OF LIABILITIES:**

**a. Commitments:**

*1) Royalty commitments*

Prior to December 2001, the Company was obligated to pay royalties to the Israeli Government relating to research and development grants received from the Office of Chief Scientist of the Israeli Ministry of Industry and Trade (the OCS ). At the time the participations were received, successful development of the related projects was not assured.

In the event of failure of a project that was partly financed by royalty-bearing Israeli Government participations, the Company was not obligated to pay any royalties to the Israeli Government.

In December 2001, the Company reached an agreement with the OCS pursuant to which it agreed to pay \$ 14,173,000 to the Government of Israel in settlement of all royalties arising from sales after June 30, 2001 with respect to previous OCS grants to the Company, thereby settling all outstanding issues between it and the OCS relating to past grants received. This amount is included in the statement of operations for the year ended December 31, 2001 as a separate item among cost of revenues.

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**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The Company decided to make this payment in five annual installments commencing in 2003. The payments are linked to the Israeli consumer price index (the Israeli CPI) and bear annual interest of 4%.

This agreement also enables the Company to participate in a new OCS program under which it became eligible to receive future research and development grants for the development of generic technologies without incurring any royalty obligations.

The Company's Israeli subsidiary, Orbograph Ltd., is obligated to pay royalties to the Israeli Government relating to research and development grants received from the OCS. At the time the participations were received, successful development of the related projects was not assured. Under the terms of the subsidiary's funding from the OCS, royalties of 2%-5% are payable on sales of products developed from a project so funded, up to 100% of the grant received by the subsidiary (in dollar terms).

In the event of failure of a project that was partly financed by royalty-bearing Israeli Government participations, the subsidiary is not obligated to pay any royalties to the Israeli Government.

At December 31, 2002, the maximum contingent royalty payable was approximately \$ 900,000.

Royalty expenses totaled \$ 309,000, \$ 2,832,000 and \$ 7,096,000 in the years ended December 31, 2002, 2001 and 2000, respectively, and are included in the statements of operations among cost of products sold. The amount for the year ended December 31, 2001 does not include the \$ 14,173,000 referred to above.

2) *Lease commitments:*

Most of the premises occupied by the Company and certain subsidiaries are rented under various operating lease agreements. The lease agreements for the premises expire on various dates between 2003 and 2011.

Minimum lease commitments of the Company and its subsidiaries under the above leases, at rates in effect on December 31, 2002, are as follows:

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	<u>\$ in thousands</u>
Years:	
2003	5,400
2004	4,442
2005	3,876
2006	3,398
2007	2,878
2008-2011	6,513
	<hr/>
	26,507
	<hr/>

The rental payments for the premises in Israel, which constitute most of the above amounts, are payable in Israeli currency linked to the Israeli CPI.

Rental expenses totaled \$ 6,197,000, \$ 5,686,000 and \$ 4,759,000 in the years ended December 31, 2002, 2001 and 2000, respectively.

The amounts for the years ended December 31, 2002 and 2001 do not include rental expenses of \$ 1,957,000 and \$ 1,183,000, respectively, which were included in restructuring costs, see note 14c.

3) *Investment commitments*

The Company has committed to invest approximately \$ 4.3 million in three private Israeli start-up companies.

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**b. Contingent liability**

Some customers of the Company that use certain products of the Company have received notices of infringement, alleging that methods carried out on equipment supplied by the Company and used in the inspection of PCBs in the course of manufacture infringe patents issued to third parties. Certain of these customers have notified the Company that they may seek indemnification from the Company for damages and expenses, which may result from this matter. To the date of issuance of these financial statements, no claims have been filed against the Company in this regard. The Company believes that the risk of its having to make payments in this regard is remote.

**c. Restriction placed in respect of liabilities**

As of December 31, 2002, the Company had unutilized credit lines of approximately \$ 50.2 million.

Under arrangements for the receipt of such credit lines, the Company entered into negative pledge agreements with certain banks. Pursuant to these agreements the Company has undertaken not to register floating charges on assets in favor of third parties without the prior consent of those banks.

**NOTE 9 SHAREHOLDERS EQUITY:**

**a. Authorized, issued and outstanding shares:**

- 1) The Company's Ordinary Shares are traded in the United States on the Nasdaq National Market under the symbol ORBK.
- 2) In September 2000, the Company allotted as bonus shares, to each shareholder of record entitled thereto at the close of business on September 8, 2000, one additional Ordinary Share for every two Ordinary Shares held at the closing of business on that date.

All share and option amounts presented in these financial statements have been adjusted to give effect to this issuance of bonus shares.



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- 3) During 2000, the Company purchased 483,000 Ordinary Shares for \$ 22,324,000, which are held as treasury shares under Israeli law. For as long as these Ordinary Shares are owned by the Company, they confer no rights and, consequently, their holders are neither eligible to participate in, or receive, any dividends, nor are they entitled to participate in, vote at, or be counted as part of the quorum for any meetings of shareholders of the Company.
- 4) Under the share option plans (see b. below), options to purchase a total of 152,444, 364,143 and 512,133 Ordinary Shares were exercised in the years ended December 31, 2002, 2001 and 2000, respectively.
- 5) As to 90,000 Ordinary Shares issued in June 2000 to a German corporation for acquisition of its minority rights in the DI Joint Venture, and as to 67,500 Ordinary Shares issued on March 15, 2002 to a German corporation for co-operation on joint research and development projects, see note 2a.

### **b. Share option plans:**

#### *1) The plans:*

- (a) In June 1992, the shareholders of the Company approved the Orbotech Ltd. Israeli Key Employee Share Incentive Plan (1992) (As Amended, 1994, 1996, 1997, 1998, 1999) (the 1992 Plan ). Under the 1992 Plan, as amended with shareholder approval when required, options to purchase

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**ORBOTECH LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

an aggregate of 3,095,718 Ordinary Shares have, from time to time over the term of the 1992 Plan, been available to be awarded to employees of the Company and/or of other Israeli entities in which the Company holds at least a 50% equity interest. The 1992 Plan is, subject to the provisions of the Israeli Companies Law, 1999 (the Companies Law ), administered by the Remuneration Committee of the Board of Directors (the Committee ). The exercise price of options granted under the 1992 Plan may not be less than 85% of the fair market value of the Ordinary Shares on the date of the grant. However, in June 2000, the Board of Directors adopted a general policy not to award options at less than the fair market value of the Ordinary Shares at the time of the grant.

The 1992 Plan was valid for ten years and expired on January 22, 2002, except as to option awards outstanding on that date.

The 1992 Plan is subject to the rules promulgated under Section 102 of the Israeli Income Tax Ordinance. Section 102 provides, inter alia, that the Company will be allowed to claim as an expense for tax purposes the amounts credited to the employees as a benefit when the related capital gains tax is payable by the employee.

- (b) In July 1995, the shareholders of the Company approved the 1995 Incentive Stock Plan for Key Employees of Orbotech Ltd. s Subsidiaries (As Amended, 1997, 1998, 1999, 2000, 2001) (the 1995 Plan ). Under the 1995 Plan, as amended with shareholder approval when required, options to purchase an aggregate of 3,931,068 Ordinary Shares have, from time to time over the term of 1995 Plan, been available to be awarded to employees and consultants of subsidiaries of the Company. The 1995 Plan is, subject to the provisions of the Companies Law, administered by the Committee. The 1995 Plan authorizes the granting of incentive stock options complying with U.S. tax provisions for those participants subject to U.S. tax law ( ISO s), and non-qualified stock options, which do not comply with such U.S. tax law provisions. The exercise price of options granted under the 1995 Plan may not be less than 100% of the fair market value of the Ordinary Shares on the date the option is granted in the case of ISOs, and not less than 85% of the fair market value for awards that are not ISOs. However, in June 2000, the Board of Directors adopted a general policy not to award options at less than the fair market value of the Ordinary Shares at the time of the grant.

The 1995 Plan is valid for ten years and will expire on June 21, 2005, except as to option awards outstanding on that date.

- (c) In May 1998, the Board of Directors approved the Stock Option Plan for Consultants of Orbotech Ltd. (1998) (the 1998 Plan ). Under the 1998 Plan, an option to purchase 33,750 Ordinary Shares, at an exercise price of \$ 12.55 per Ordinary Share, was granted to an independent consultant of the Company.

This option was granted under the terms and conditions otherwise applicable to grants made under the 1992 Plan (see (a) above) and will expire on April 6, 2006.

- (d) In August 2000, the shareholders of the Company approved the Orbotech Ltd. Employee Share Ownership and Option Plan (2000) (the 2000 Plan ). Under the 2000 Plan, options to purchase an aggregate amount of 3,300,000 Ordinary Shares may, from time to time, be awarded to employees, officers, directors and consultants of the Company and/or of other companies,

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partnerships or other entities in Israel in which the Company holds at least a 50% equity interest. The 2000 Plan is, subject to the provisions of the Companies Law, administered by the Committee. The exercise price of options awarded under the 2000 Plan may not be less than 100% of the fair market value of the Ordinary Shares on the last day immediately preceding the date of option grant upon which public trading of the Company's Ordinary Shares takes place.

The 2000 Plan is valid for ten years and will expire on June 20, 2010, except as to option awards outstanding on that date.

Options awarded to employees under the 2000 Plan may, but need not necessarily be, subject to the rules promulgated under Section 102 of the Israeli Income Tax Ordinance.

As a result of a change made to Section 102 of the Israeli Income Tax Ordinance as part of the recent Israeli tax reform (see note 10e), and pursuant to an election made by the Company thereunder, employees will be subject to a lower tax rate on capital gains accruing to them in respect of Section 102 awards made after December 31, 2002. However, the Company will not be allowed to claim as an expense for tax purposes the amounts credited to such employees as a benefit when the related capital gains tax is payable by them.

- (e) As of December 31, 2002, options for the purchase of 1,551,874 Ordinary Shares were available for future awards under the 1995 Plan and the 2000 Plan.

Under these plans, options usually vest as follows: 50% two years after the effective date of grant; 75% after three years; and 100% after four years. The options expire between five to ten years from the date of grant. However, the general policy of the Company, adopted by the Board of Directors in June 2000, is that newly awarded options expire no later than five years following their grant. Options also generally expire when the grantee ceases to be an employee of the Company or any of its subsidiaries or a consultant to the Company.

Ordinary Shares purchased upon the exercise of options have the same rights as other Ordinary Shares, immediately upon allotment.

2) *Options granted to employees:*

- (a) A summary of the status of the above plans in respect of options granted to employees as of December 31, 2002, 2001 and 2000, and changes during the years ended on those dates, is presented below:

Year ended December 31					
2002		2001		2000	
Number	Weighted average	Number	Weighted average	Number	Weighted average

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		<u>exercise price</u>		<u>exercise price</u>		<u>exercise price</u>
Options outstanding at beginning of year	5,019,944	\$ 31.99	3,446,805	\$ 33.32	2,100,145	\$ 17.42
Changes during the year:						
Granted(1)(2)(3)	1,341,502	\$ 19.55	2,252,026	\$ 27.50	1,981,925	\$ 49.03
Exercised	(146,819)	\$ 11.31	(358,518)	\$ 9.92	(491,508)	\$ 8.98
Forfeited(4)	(554,437)	\$ 32.32	(320,369)	\$ 39.35	(143,757)	\$ 16.06
	<u>5,660,190</u>	<u>\$ 29.55</u>	<u>5,019,944</u>	<u>\$ 31.99</u>	<u>3,446,805</u>	<u>\$ 33.32</u>
Options exercisable at year end	<u>1,718,546</u>	<u>\$ 30.97</u>	<u>744,550</u>	<u>\$ 12.67</u>	<u>534,380</u>	<u>\$ 10.09</u>
Weighted average fair value of options granted during the year(5)	<u>\$ 6.33</u>		<u>\$ 12.34</u>		<u>\$ 23.86</u>	

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(1) Including options granted to:

	Year ended December 31			
	2001		2000	
	Number	Weighted average exercise price	Number	Weighted average exercise price
The Company's Chief Executive Officer (who is a director)	125,000	\$ 22.27	150,000	\$ 66.42
Other directors	43,500	\$ 22.27	54,000	\$ 66.42

(2) In addition, as of December 31, 2001, options to purchase a total of 337,333 Ordinary Shares had been designated for grant during 2002, pursuant to the 1995 and 2000 Plans, at exercise prices to be determined as the market price of the Company's Ordinary Shares at the designated time of grant in accordance with the applicable option plan. The vesting period of such options commenced upon the designated time of grant. For accounting purposes, until the exercise price was determined, such options were treated under APB 25 as a variable plan, with no effect on the Company's results of operations. Upon determination of the exercise price the options were treated as a fixed plan, with no deferred compensation cost.

(3) Composed as follows:

	Year ended December 31								
	2002			2001			2000		
	Number	Weighted average exercise price	Weighted average fair value	Number	Weighted average exercise price	Weighted average fair value	Number	Weighted average exercise price	Weighted average fair value
Options granted during the year at the following exercise prices:									
Below market value							483,750	\$ 39.33	\$ 18.30
At market value	1,341,502	\$ 19.55	\$ 6.33	2,252,026	\$ 27.50	\$ 12.34	1,498,175	\$ 52.16	\$ 23.50

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- (4) Or re-designated (in respect of options to purchase a total of 10,400 Ordinary Shares) pursuant to the change of status of an optionee from an employee of the Company to an employee of FrontLine during 2002.
- (5) The fair value of each option granted is estimated on the date of grant using the Black-Scholes option-pricing model with the following weighted average assumptions:

	Year ended December 31		
	2002	2001	2000
Dividend yield	0%	0%	0%
Expected volatility	27%	44%	43%
Risk-free interest rate	1.89%	3.78%	6.50%
Expected life in years	2.86	2.75	2.75

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- (b) The following table summarizes certain information about options granted to employees which were outstanding and exercisable under the above plans as of December 31, 2002:

Range of exercise prices	Options outstanding			Options exercisable		
	Number outstanding at December 31, 2002	Weighted average remaining contractual life	Weighted average exercise price	Number exercisable at December 31, 2002	Weighted average remaining contractual life	Weighted average exercise price
		Years	\$		Years	\$
3.00 to 9.99	204,486	2.71	6.23	196,049	2.73	6.21
10.00 to 19.99	2,023,199	4.26	15.83	527,475	3.98	13.29
20.00 to 29.99	1,321,769	3.85	25.53	147,877	6.22	24.02
30.00 to 39.99	390,804	4.38	36.84	163,500	4.31	37.02
40.00 to 49.99	802,882	4.68	44.17	219,438	6.03	45.23
50.00 to 59.99	713,050	2.95	51.60	362,207	2.92	51.59
60.00 to 67.00	204,000	2.66	66.42	102,000	2.66	66.42
3.00 to 67.00	5,660,190	3.95	29.55	1,718,546	4.02	30.97

- (c) As to pro forma information assuming the Company had applied the fair value recognition provisions of FAS 123, see note 1r.

3) *Options granted to non-employees:*

- (a) A summary of the status of the above plans in respect of options granted to employees of FrontLine (a 50%-owned joint venture, see note 3) and to consultants as of December 31, 2002, 2001 and 2000, and changes during the years ended on those dates, is presented below:

	Year ended December 31					
	2002		2001		2000	
	Number	Weighted average exercise price	Number	Weighted average exercise price	Number	Weighted average exercise price
Options outstanding at beginning of year	140,802	\$ 27.69	101,275	\$ 27.76	90,000	\$ 16.65

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Changes during the year:

Granted(1)(2)(3)	58,748	\$ 21.02	52,302	\$ 28.08	31,900	\$ 48.66
Exercised	(5,625)	\$ 11.95	(5,625)	\$ 11.95	(20,625)	\$ 12.22
Forfeited	(15,550)	\$ 33.19	(7,150)	\$ 42.19		
	<u>178,375</u>	\$ 25.51	<u>140,802</u>	\$ 27.69	<u>101,275</u>	\$ 27.76
Options outstanding at end of year						
Options exercisable at end of year	<u>67,101</u>	\$ 24.26	<u>32,813</u>	\$ 18.38	<u>7,500</u>	\$ 12.55
Weighted average fair value of options granted during the year(4)	\$ 5.61		\$ 12.34		\$ 23.86	

- (1) In addition, as of December 31, 2001, options to purchase a total of 7,148 Ordinary Shares had been designated for grant during 2002, pursuant to the 1995 and 2000 Plans, at exercise prices to be determined as the market price of the Company's Ordinary Shares at the designated time of grant in accordance with the applicable option plan. The vesting period of such options commenced upon the designated time of grant.
- (2) Or re-designated (in respect of options to purchase a total of 10,400 Ordinary Shares) pursuant to the change of status of an optionee from an employee of the Company to an employee of FrontLine during 2002.

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- (3) The options were granted at market value.
- (4) The fair value of each option granted is estimated on the date at which a commitment for performance by the optionee to earn the option is reached, using the Black-Scholes option-pricing model with the following weighted average assumptions:

	Year ended December 31		
	2002	2001	2000
Dividend yield	0%	0%	0%
Expected volatility	27%	44%	43%
Risk-free interest rate	1.50%	2.00%	6.50%
Expected life in years	2.75	2.75	2.75

- (b) The following table summarizes certain information about options granted to employees of FrontLine and to consultants which were outstanding and exercisable under the above plans as of December 31, 2002:

Options outstanding				Options exercisable		
Range of exercise prices	Number outstanding at December 31, 2002	Weighted average remaining contractual life	Weighted average exercise price	Number exercisable at December 31, 2002	Weighted average remaining contractual life	Weighted average exercise price
\$		Years	\$		Years	\$
10.00 to 19.99	74,825	3.97	15.04	27,925	3.23	12.28
20.00 to 29.99	61,587	4.34	24.89	25,313	4.75	23.89
30.00 to 39.99	9,900	3.36	35.29			
40.00 to 49.99	23,388	2.81	46.59	9,525	2.76	47.63
50.00 to 52.99	8,675	2.81	52.26	4,338	2.81	52.26
10.00 to 52.99	178,375	3.86	25.51	67,101	3.71	24.26

- (c) The amortization of deferred stock compensation in respect of options granted to employees of FrontLine and to consultants in the years ended December 31, 2002, 2001 and 2000, is \$ 67,000, \$ 231,000 and \$ 322,000, respectively.

**c. Dividends:**

- 1) The distribution of cash dividends in the amount of approximately \$ 140 million out of retained earnings of approximately \$ 221 million as of December 31, 2002 would subject the Company to a 15%-25% tax on the amount distributed, thereby effectively reducing the dividend distribution by the amount of the tax (see notes 1o, 10a and 10g(3)).
- 2) In the event that cash dividends are declared by the Company, such dividends would be declared and paid in Israeli currency. Under current Israeli regulations, any cash dividend in Israeli currency paid in respect of Ordinary Shares purchased by non-residents of Israel with non-Israeli currency may be freely repatriated in such non-Israeli currency, at the rate of exchange prevailing at the time of repatriation.

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**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**NOTE 10 TAXES ON INCOME:**

**a. Tax benefits under the Law for the Encouragement of Capital Investments, 1959**

Most of the production facilities of the Company and its Israeli subsidiaries have been granted approved enterprise status under the above law. The main benefit arising from such status is the reduction in tax rates on income derived from approved enterprises .

Since the Company is a foreign investors company as defined by the above law, it is entitled to a ten-year period of benefits (instead of a seven-year period).

Income derived from approved enterprises is tax exempt for a period of two or four years out of the ten-year period of benefits. Based on the percentage of foreign shareholding in the Company, income derived during the remaining eight or six years of benefits is taxable at the rate of 15%-25%. The period of benefits relating to the approved enterprises will expire in the years 2004 through 2010.

The tax benefits in respect of part of the production facilities of the Company have expired. Consequently, the portion of taxable income to which approved enterprise benefits apply is approximately 88%, 87% and 88% in the years ended December 31, 2002, 2001 and 2000, respectively.

In the event of distribution of cash dividends from income which was tax exempt as above, the Company would have to pay the 15%-25% tax in respect of the amount distributed. The amount distributed for this purpose includes the amount of the tax that applies as a result of the distribution (see g(3) below and note 9c(1)).

The Company and its Israeli subsidiaries are entitled to claim accelerated depreciation in respect of equipment used by the approved enterprises during five tax years.

The entitlement to the above benefits is conditional upon the Company and its Israeli subsidiaries fulfilling the conditions stipulated by the above law, regulations published thereunder and the certificate of approval for the specific investments in approved enterprises. In the event of failure to comply with these conditions the benefits may be canceled, and the Company may be required to refund the amount of the benefits, in whole or in part, with the addition of linkage differences to the Israeli CPI and interest.

**b. Measurement of results for tax purposes under the Income Tax (Inflationary Adjustments) Law, 1985**

(the Inflationary Adjustments Law )

Under the Inflationary Adjustments Law, results for tax purposes are measured in real terms, having regard to the changes in the Israel CPI, or in the exchange rate of the dollar for a foreign investors company . The Company and its Israeli subsidiaries are taxed under this law.

The Company and its Israeli subsidiaries have elected, through the 2002 tax year, to measure their results for tax purposes on the basis of the changes in the Israeli CPI.

The Company has elected, as from the 2003 tax year, to measure its results for tax purposes on the basis of the changes in the exchange rate of the dollar. The Company must continue to be taxed on this basis for at least three years. The Company s Israeli subsidiaries have elected to continue measuring their results for tax purposes on the basis of the changes in the Israeli CPI.

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**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

As explained in note 1a(4), the financial statements are measured in dollars. The difference between the changes in the Israeli CPI and in the exchange rate of the dollar relative to Israeli currency, both on annual and cumulative bases, creates a difference between taxable income and income reflected in these financial statements.

Paragraph 9(f) of FAS No 109, Accounting for Income Taxes, prohibits the recognition of deferred tax liabilities or assets that arise from differences between the financial reporting and tax bases of assets and liabilities that are measured from the local currency into dollars using historical exchange rates, and that result from changes in exchange rates or indexing for tax purposes. Consequently, the abovementioned differences were not reflected in the computation of deferred tax assets and liabilities.

**c. Tax benefits under the Law for the Encouragement of Industry (Taxes), 1969**

The Company and its Israeli subsidiaries are industrial companies as defined by this law and as such are entitled to certain tax benefits, consisting mainly of accelerated depreciation as prescribed by regulations published under the Inflationary Adjustments Law and amortization of patents and certain other intangible property.

**d. Other applicable tax rates:**

*1) Income from other sources in Israel*

Income not eligible for approved enterprise benefits mentioned in a. above is taxed at the statutory corporate rate of 36%.

*2) Income of non-Israeli subsidiaries*

Non-Israeli subsidiaries are taxed according to the tax laws in their countries of residence.

**e. Reform of the Israeli tax system**

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In 2002, Amendment to the Israeli Tax Ordinance (No. 132), 2002 (the Israeli Tax Reform Law ) was published. The Israeli Tax Reform Law, which comprehensively reforms certain parts of the Israeli tax system, entered into effect on January 1, 2003, although certain provisions thereof will be applied from later dates. The Company expects that the implementation of the Israeli Tax Reform Law will not have a material effect on its tax liability, except as described in note 9b.

### **f. Carryforward tax losses**

Carryforward tax losses totaled approximately \$ 29.0 million at December 31, 2002, of which approximately \$ 8.1 million will expire in the years 2006-2017 and approximately \$ 20.9 million have no expiration date. A valuation allowance in the amount of approximately \$ 3.6 million is recorded in respect of deferred tax assets resulting from these losses (see g(1) below).

Carryforward capital losses for tax purposes totaled approximately \$ 2.0 million at December 31, 2002. Such losses have no expiration date. A full valuation allowance is recorded in respect of deferred taxes assets resulting from these losses (see g(1) below).

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- 1) Provided in respect of the following:

	December 31	
	2002	2001
	\$ in thousands	
Provision for vacation pay	794	351
Accrued severance pay	1,467	884
Carryforward tax losses	7,201	7,320
Research and development costs	5,305	4,875
Property, plant and equipment	50	51
Other	600	780
	<u>15,417</u>	<u>14,261</u>
Less valuation allowance*	8,468	8,360
	<u>6,949</u>	<u>5,901</u>

\* The changes in the valuation allowance are comprised as follows:

	Year ended	
	December 31	
	2002	2001
	\$ in thousands	
Balance at beginning of year	8,360	10,316
Additions (reductions) during the year	108	(1,956)
Balance at end of year	<u>8,468</u>	<u>8,360</u>

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2) Deferred taxes are included in the balance sheets as follows:

	December 31	
	2002	2001
	\$ in thousands	
Among current assets	4,953	3,692
Among non-current assets	1,996	2,209
	<u>*6,949</u>	<u>*5,901</u>

\* Realization of this deferred tax balance is conditional upon earning, in the coming years, taxable income in an appropriate amount. The amount of the deferred tax asset, however, could be reduced in the near term if estimates of future taxable income are reduced.

The deferred taxes are computed for the Company and its Israeli subsidiaries at the average tax rate of 15%. For non-Israeli subsidiaries, the deferred taxes are computed at the average tax rate of 40%.

3) As stated in a. above, part of the Company's income is tax-exempt due to the approved enterprise status granted to most of the Company's production facilities. The Company has decided permanently to reinvest the amount of the tax-exempt income and not to distribute such income as cash dividends. Accordingly, no deferred income taxes have been provided in respect of the tax-exempt income.

The amount of tax that would have been payable had such exempt income earned through December 31, 2002 been distributed as dividends is approximately \$ 21 million.



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## ORBOTECH LTD.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## h. Taxes on income included in the statements of operations:

1) As follows:

	Year ended December 31		
	2002	2001	2000
	\$ in thousands		
Current:			
Israeli	(993)	3,710	8,019
Non-Israeli	942	650	2,313
	(51)	4,360	10,332
Deferred, see g. above:			
Israeli	(886)	(1,812)	109
Non-Israeli	(162)	(3,523)	397
	(1,048)	(5,335)	506
	(1,099)	(975)	10,838

2) Following is a reconciliation of the theoretical tax expense, assuming all income is taxed at the statutory corporate tax rate applicable to Israeli corporations (see d(1) above), and the actual tax expense:

	Year ended December 31		
	2002	2001	2000
	\$ in thousands		
Income (loss) before taxes on income*	(16,659)	1,056	90,725
Theoretical tax expense (benefit) on the above amount	(5,997)	380	32,661
Less tax benefits arising from approved enterprises	(3,389)	5,034	18,878

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	(2,608)	(4,654)	13,783
Increase (decrease) in taxes resulting from:			
Different tax rates applicable to non-Israeli subsidiaries	(1,455)	95	8,165
Permanent differences, including difference between the basis of measurement of income reported for tax purposes and the basis of measurement of income for financial reporting purposes net	2,556	5,540	(8,677)
Other	300		
Net change in valuation allowance	108	(1,956)	(2,433)
	<u>          </u>	<u>          </u>	<u>          </u>
Actual tax expense (benefit)	(1,099)	(975)	10,838
	<u>          </u>	<u>          </u>	<u>          </u>
* As follows:			
Taxable in Israel	(11,242)	2,420	74,817
Taxable outside Israel	(5,417)	(1,364)	15,908
	<u>          </u>	<u>          </u>	<u>          </u>
	(16,659)	1,056	90,725
	<u>          </u>	<u>          </u>	<u>          </u>

**i. Tax assessments**

Final tax assessments have been received by the Company through the tax year 1999.

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The Company operates internationally, which gives rise to exposure to market risks, mainly from changes in foreign exchange rates. The Company uses financial instruments and derivatives in order to limit its exposure to risks arising from such changes.

The Company is exposed to losses in the event of non-performance by counterparties to financial instruments; however, as the counterparties are major Israeli banks and a major United Kingdom investment bank, the Company does not expect any counterparties to fail to meet their obligations. The Company does not require or place collateral with respect to these financial instruments. The Company does not hold or issue derivatives for trading purposes.

**b. Derivative instruments**

As stated in note 1q, the Company enters into various types of foreign exchange derivatives in managing its foreign exchange risk. The notional amounts of these derivatives as of December 31, 2002 were as follows:

	<u>\$ in millions</u>
Forward exchange contracts for conversion of:	
Euros into dollars	13
Japanese yen into dollars	38
Dollars into Israeli currency	38
Korean won into dollars	2
Taiwan dollars into dollars	4

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The terms of all of these currency derivatives are less than one year.

The following table summarizes activity in other comprehensive income related to derivatives classified as cash flow hedges held by the Company during the period from January 1, 2001 (the date of adoption of FAS 133) through December 31, 2002:

	Year ended	
	December 31	
	2002	2001
	\$ in thousands	
Balance at beginning of year	204	
Changes in fair value of derivatives gain	109	240
Reclassifications into earnings from other comprehensive income	(240)	
Tax effect	20	(36)
	93	204

### c. Fair value of financial instruments

The fair value of financial instruments included in working capital is usually identical or close to their carrying amount. The fair value of non-current trade receivables, long-term investments and long-term liabilities also approximate the carrying amounts, since they bear interest at rates close to prevailing market rates.

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As to the fair value of held-to-maturity securities, see note 13b.

The fair value of derivatives as of December 31, 2002, constituted an asset and a liability of approximately \$ 1.0 million and \$ 0.5 million, respectively. The fair value of the derivatives generally reflects the estimated amounts that the Company would receive or pay upon termination of the contracts at the reporting date.

**NOTE 12 MONETARY BALANCES IN NON-DOLLAR CURRENCIES:**

	December 31, 2002		
	Israeli currency(a)		Other non-dollar currencies(c)
	Unlinked	Linked(b)	
	\$ in thousands		
Assets current	3,298	122	65,265
Liabilities:			
Current liabilities	9,184	3,487	18,426
Long-term liability to the Government of Israel (including current maturities)		14,882	
	9,184	18,369	18,426

(a) The above does not include balances in Israeli currency linked to the dollar.

(b) To the Israeli CPI.

(c) As to hedging transactions entered into by the Company in order to maintain the dollar value of net assets in non-dollar currencies, see note 11.

**NOTE 13 SUPPLEMENTARY BALANCE SHEET INFORMATION:****a. Cash and cash equivalents**

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The balances as of December 31, 2002 and 2001 include \$ 95,893,000 and \$ 91,820,000, respectively, of highly liquid bank deposits. The deposits are mainly denominated in dollars and bear interest. The annual interest rate as of December 31, 2002 was 0.75% - 2.33%.

### b. Marketable securities:

#### 1) Held-to-maturity securities:

At December 31, 2002 and 2001 the amortized cost basis, aggregate fair value and unrealized holding gains and losses by major security type were as follows:

	Amortized cost	Aggregate fair value	Unrealized gains	Unrealized losses
\$ in thousands				
December 31, 2002:				
Quoted non-Israeli corporate debentures	35,544	36,441	984	87
U.S. treasury notes	2,875	3,189	314	
	38,419	39,630	1,298	87
December 31, 2001 quoted non-Israeli corporate debentures	40,496	41,260	1,200	436

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- 2) Trading securities asset backed securities in the amount of \$ 6,991,000 at December 31, 2001.
- 3) The marketable securities are presented in the balance sheets as follows:

	<b>December 31</b>	
	<b>2002</b>	<b>2001</b>
	<b>\$ in thousands</b>	
Among current assets:		
Held-to-maturity securities	19,781	15,345
Trading securities		6,991
	<u>19,781</u>	<u>23,336</u>
As long-term investments held-to-maturity securities	*18,638	25,151
	<u>38,419</u>	<u>47,487</u>
* The above securities mature as follows:		
2004	10,163	
2005	7,975	
2006	500	
	<u>18,638</u>	

**c. Short-term bank deposits**

The deposits are denominated in dollars and bear interest. The annual interest rate at December 31, 2002 was 2.33%.

**d. Accounts receivable:**

December 31

	2002	2001
	\$ in thousands	
1) Trade allowance for doubtful accounts	3,275	2,631
2) Other:		
Employees	1,749	2,967
Prepaid expenses	2,416	2,189
Deposits in respect of rent	2,998	3,280
Israeli Government departments and agencies (mainly value added tax refundable)	2,334	1,019
Advance payments to suppliers	2,536	2,977
Sundry	6,803	4,978
	<b>18,836</b>	<b>17,410</b>



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	<b>December 31</b>	
	<b>2002</b>	<b>2001</b>
	<b>\$ in thousands</b>	
Employees and employee institutions	10,918	10,185
Israeli Government departments and agencies	3,821	19,169
Deferred revenue relating to warranty commitments*	8,921	8,902
Deferred service revenue	666	1,108
Advances from customers	287	387
Accrued restructuring costs, see note 14c	6,936	2,230
Accrued expenses	7,857	5,661
Sundry	3,030	4,230
	<b>42,436</b>	<b>51,872</b>

\*

The changes in deferred revenues relating to deferred warranty commitments during the year ended December 31, 2002:

	<b>\$ in thousands</b>
Balance at beginning of year	8,902
Revenue recognized during the year	(9,462)
Deferred revenue relating to new sales	9,481
Balance at end of year	<b>8,921</b>

**NOTE 14 SELECTED STATEMENT OF OPERATIONS DATA:****a. Segment and geographical information:**

***Operating segments:***

1) *General*

The Company's reportable operating segments are as follows:

- (a) *Production Support Solutions for the Electronics Industry* design, development, manufacture, marketing and/or service of yield-enhancing, production support solutions for specialized applications in the supply chain of the electronics industry, primarily AOI and process control systems and CAM and imaging solutions principally for application in the production of PCBs and FPDs. In view of their overall inter-dependence and the similarity of their long-term economic characteristics, products and services, production processes, classes of customers and methods of distribution, all these operations have been aggregated.
- (b) *Automatic Check Reading* development and marketing of automatic check reading software to banks and other check processing organizations.

2) *Information on revenues and assets of the reportable operating segments:*

- (a) Measurement of revenues and assets of the operating segments:

The measurement of revenues and assets of the reportable operating segments is based on the same accounting principles applied in these financial statements.

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Segment profits or loss reflect the income or loss from operations of the segment and do not include financial income net, taxes on income, share in losses of associated company and minority share in profits, since those items are not allocated to the segments.

(b) Financial data relating to reportable operating segments:

	<b>Production Support Solutions for the Electronics Industry</b>	<b>Automatic Check Reading</b>	<b>Total</b>
	<b>\$ in thousands</b>		
<b>Year ended December 31, 2002:</b>			
Revenues from unaffiliated customers:			
Sales of products	146,856	7,443	154,299
Services rendered	60,671	1,398	62,069
<b>Total revenues</b>	<b>207,527</b>	<b>8,841</b>	<b>216,368</b>
<b>Operating income (loss)</b>	<b>(21,235)</b>	<b>1,688</b>	<b>(19,547)</b>
<b>Assets (at end of year)</b>	<b>364,707</b>	<b>7,891</b>	<b>372,598</b>
<b>Expenditures for segment assets</b>	<b>4,431</b>	<b>160</b>	<b>4,591</b>
<b>Depreciation and amortization</b>	<b>9,892</b>	<b>208</b>	<b>10,100</b>
<b>Year ended December 31, 2001:</b>			
Revenues from unaffiliated customers:			
Sales of products	221,349	4,980	226,329
Services rendered	74,580	995	75,575
<b>Total revenues</b>	<b>295,929</b>	<b>5,975</b>	<b>301,904</b>
<b>Operating income (loss)</b>	<b>(4,751)</b>	<b>1,077</b>	<b>(3,674)</b>
<b>Assets (at end of year)</b>	<b>397,595</b>	<b>3,816</b>	<b>401,411</b>
<b>Expenditures for segment assets</b>	<b>8,817</b>	<b>487</b>	<b>9,304</b>

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Depreciation and amortization	14,491	90	14,581
Year ended December 31, 2000:			
Revenues from unaffiliated customers:			
Sales of products	294,122	4,296	298,418
Services rendered	73,425	498	73,923
Total revenues	367,547	4,794	372,341
Operating income	81,775	945	82,720
Assets (at end of year)	417,394	1,855	419,249
Expenditures for segment assets	11,133	76	11,209
Depreciation and amortization	11,158	100	11,258

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(c) Following is a reconciliation of the assets of the reportable segments to the data included in the consolidated financial statements:

	Year ended December 31		
	2002	2001	2000
	\$ in thousands		
Total assets of reportable segments at year end	372,598	401,411	419,249
Assets not allocated to segments	14,571	6,214	566
Consolidated assets at year end	387,169	407,625	419,815

**Geographical information:**

1) Revenues classified by geographical area (based on the location of customers):

	Year ended December 31		
	2002	2001	2000
	\$ in thousands		
Sales of products:			
North America (mainly the United States)	16,846	39,969	65,666
Europe	9,507	30,198	31,972
Japan	27,245	45,460	45,458
Taiwan	41,854	53,611	88,402
China	29,750	33,546	22,200
Korea	16,268	13,458	33,800
Other Far Eastern countries	12,452	9,467	10,221
Other	377	620	699
Total sales of products	154,299	226,329	298,418
Services rendered:			
North America (mainly the United States)	16,052	23,603	26,877

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Europe	9,710	12,878	12,793
Japan	8,690	10,043	8,659
Taiwan	13,122	14,541	11,400
China	7,040	5,925	2,631
Korea	4,016	5,270	4,582
Other Far Eastern countries	3,041	2,900	6,657
Other	398	415	324
	<hr/>	<hr/>	<hr/>
Total services rendered	62,069	75,575	73,923
	<hr/>	<hr/>	<hr/>
	216,368	301,904	372,341
	<hr/>	<hr/>	<hr/>

- 2) Most of the Company's long-lived assets are located in Israel.

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	Year ended December 31		
	2002	2001	2000
	\$ in thousands		
1) Comprised as follows:			
Selling	39,124	44,281	44,219
General and administrative	11,060	14,331	16,508
	<u>50,184</u>	<u>58,612</u>	<u>60,727</u>
2) The changes in allowance for doubtful accounts are comprised as follows:			
Balance at beginning of year	2,631	2,063	1,522
Increase during the year	1,390	788	780
Bad debt written off	(746)	(220)	(239)
Balance at end of year	<u>3,275</u>	<u>2,631</u>	<u>2,063</u>

**c. Restructuring costs:**

- 1) The consolidated statements of operations for the years ended December 31, 2002 and 2001 include restructuring costs in the Production Support Solutions for the Electronics Industry segment totaling approximately \$ 10.7 million and \$ 6.1 million, respectively. During the years ended December 31, 2002 and 2001, the Company implemented restructuring plans which included reduction of personnel (termination of approximately 250 employees during each of the years) and the closing and consolidation of certain of the Company's offices.
- 2) The primary components of the restructuring costs are:

Year ended	
December 31	
2002	2001

	\$ in thousands	
Costs relating to workforce reduction	8,301	4,579
Costs relating to consolidation of the Company's offices, see also note 5b	2,432	1,570
	<u>10,733</u>	<u>6,149</u>

3) The following table summarizes the activity in the restructuring provision for the two years ended December 31, 2002:

	Year ended		Balance at	Year ended December 31, 2002			Balance at
	December 31, 2001		December 31,	December 31, 2002			December 31,
	Provision	Charges	2001	Provision	Reversal	Charges	2002
	\$ in thousands			\$ in thousands			
Costs relating to workforce reduction	4,579	3,281	1,298	8,301		4,621	4,978
Costs relating to consolidation of the Company's offices	1,570	638	932	2,432	31	1,375	1,958
	<u>6,149</u>	<u>3,919</u>	<u>2,230</u>	<u>10,733</u>	<u>31</u>	<u>5,996</u>	<u>6,936</u>

The balance at December 31, 2002 relates to the 2002 restructuring plans.



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	Year ended December 31		
	2002	2001	2000
	\$ in thousands		
Income:			
Interest:			
In respect of bank deposits and securities	3,422	7,511	8,782
Other	376	117	177
Non-dollar transaction gains net	586		388
	<u>4,384</u>	<u>7,628</u>	<u>9,347</u>
Expenses:			
Interest:			
On long-term liabilities	582	18	78
Costs relating to factoring of letters of credit and promissory notes	233	252	304
Other	681	626	960
Non-dollar transaction losses net		2,002	
	<u>1,496</u>	<u>2,898</u>	<u>1,342</u>
	<u>2,888</u>	<u>4,730</u>	<u>8,005</u>

**e. Earnings (loss) per share**

Following are data relating to the weighted average number of shares for the purpose of computing earnings (loss) per share:

	Year ended December 31		
	2002	2001	2000
	In thousands		

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Weighted average number of shares issued and outstanding (net of treasury shares) used in computation of basic earnings (loss) per share	31,972	31,819	31,566
Add incremental shares from assumed exercise of options		1,052	1,366
Weighted average number of shares used in computation of diluted earnings (loss) per share	31,972	32,871	32,932

Diluted loss per share for the year ended December 31, 2002 does not include 655,000 incremental shares from assumed exercise of options because of their anti-dilutive effect since the Company had a net loss for the year.